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CONTENTS, DECEMBER 1958

Cliff Swallow in Maryland	Walter M. Booth	83
Nesting Herring Gulls on Maryland Coast	G. Ellis Miller	92
Shorebird Concentrations in Caroline County	Samuel H. Dyke	93
Ring-billed Gulls Robbing Mergansers	Marvin Hewitt	94
Shorebird Concentrations in Kent County	Dan Gibson	94
House Finch Added to Maryland List	E. Wayne Marshall	96
The Season--July, August, September, 1958	Chandler S. Robbins	97
Sanctuaries Are Living Things. Part II	Sterling W. Edwards	101
Conservation In 1958		102
Species Index, MARYLAND BIRDLIFE, Vol. 1-13	Hervey Brackbill	105
Author Index, MARYLAND BIRDLIFE, Vol. 1-13	Hervey Brackbill	126

COVER: Song Sparrow. Photograph by Dr. Charles J. Stine

HEADINGS: By Irving E. Pampe, Art Editor

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MARYLAND BIRDLIFE

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THE CLIFF SWALLOW IN MARYLAND ITS DISTRIBUTION, ECOLOGY, and HABITS

Walter M. Booth

The ecology and the distribution of any species of bird are so closely related that the latter may be said to be a function of the extent to which the requirements of the former are satisfied. In the story of the rise and decline of the Cliff Swallow (*Petrochelidon pyrrhonota*) in the eastern states we have a dramatic example of the dependence of living things on their habitat and their sensitivity to environmental changes.

Ecological Requirements

The Cliff Swallow builds a mud nest that it fastens to a vertical surface. Like other swallows, it feeds largely on flying insects. These two facts are the key to an understanding of the distribution and local abundance of the species. The nest requires protection from the rain, and the surface to which it is attached must be sufficiently rough to provide adhesion. Furthermore, the birds need a supply of mud having enough cohesiveness to hold together without the benefit of binding material, which is not commonly used. The need for flying insects can be satisfied only in open areas. Hence the Cliff Swallow is a bird of such open places as agricultural areas, lakes, and marshes.

Rise and Decline in the East

We may infer from our knowledge of the Cliff Swallow's ecological requirements, that, before the coming of civilization to America, this bird was rare and local in the heavily forested eastern part of the continent. It must have been restricted largely to such open areas as were suitable for forage, with nearby cliffs or bluffs on which to place the nests. In the West the species was undoubtedly more common, there being in that part of the continent more open areas, cliffs and canyon walls.

The coming of the white man and the clearing of the forests resulted in the creation of habitat suitable to the needs of the swallows. The unpainted barns with their wide eaves were found to be ideal nest sites, and the fields, meadows, pastures, and croplands of the white man were excellent feeding grounds for the birds. The swallows took advantage of the new conditions and multiplied exceedingly, extending their breeding

range into areas where they had not previously nested. Thus the birds spread over most of the East.

This expansion took place after 1800, as is evidenced by the fact that the birds were seldom seen until well into the nineteenth century. The peak came about 1900 (earlier in some places), at which time there must have been scores if not hundreds of birds nesting in the East for every one that nested in the same area prior to the advent of the first colonists. In the West a similar expansion must have occurred, although it was less dramatic owing to the fact that the birds already were widely distributed when the settlers appeared.

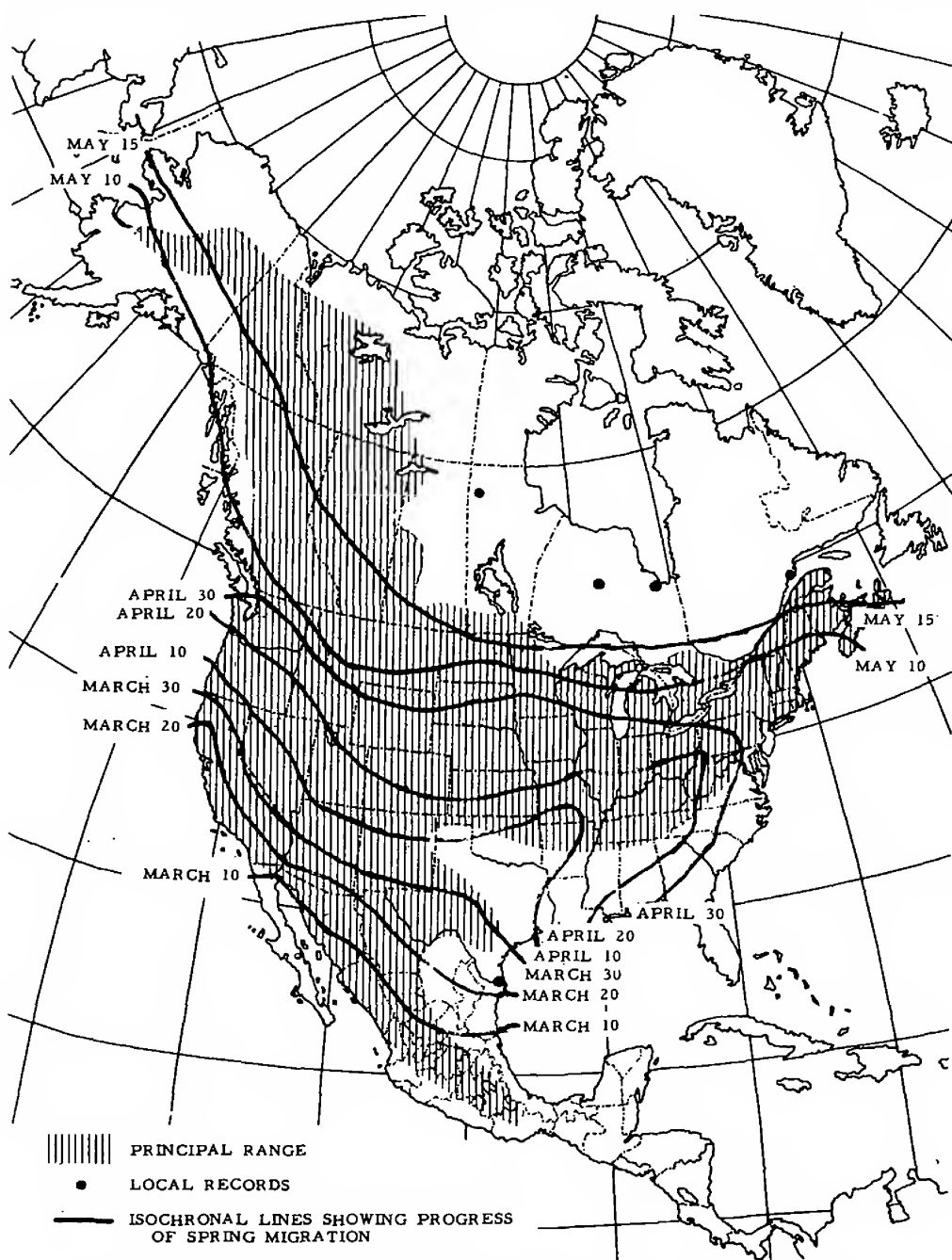
Doubtless the swallows would have continued to increase and extend their range except for two factors that turned the tide and resulted in a drastic decrease in their numbers throughout most of the East and probably to a lesser extent in the West. Firstly, unpainted barns went out of style toward the end of the last century, to be replaced by more modern painted ones; and the birds found that their nests would not adhere to the smooth, painted surfaces. Unable to find acceptable substitute nesting sites, the birds became uncommon in many eastern states. (In parts of the West the birds thus dislodged would have many natural nest sites available and apparently did not experience such great losses.) Secondly, the introduced House Sparrow became established in many places where the swallows were nesting, and, by taking over nests both before and after the eggs were laid, broke up many prosperous colonies.

In summing up, the Cliff Swallow, formerly uncommon or rare in the East, profited handsomely as a species from its ability to adapt to the changes imposed by civilization, making use of artificial nesting sites; but it lost ground and became uncommon when deprived of such places to nest. Few American non-game species have shown such a dramatic response to the activities of man.

The Cliff Swallow in North America

Breeding range. Map 1, showing the breeding range of the Cliff Swallow, is based on reports of actual colonies as submitted to the U. S. Fish and Wildlife Service or listed in recent literature. In Mexico the breeding range is poorly known owing to the extremely few colonies reported from that country.

Spring migration. The map also illustrates the progress of the northward migration by means of isochronal lines (taken from Cooke, 1915) through places at which the main migrating bodies of birds arrive on the same average date. The birds migrate by day, feeding as they move northward. It will be noticed from the map that the eastern birds follow the shoreline of the Gulf of Mexico rather than flying over water from Yucatan to the southern states, and that migration is much more rapid in the West than in the East. As a migrant in Maryland the Cliff Swallow is common on the Allegheny Plateau, but it becomes progressively less common eastward, and is rare in the Eastern Shore section of the Coastal Plain.



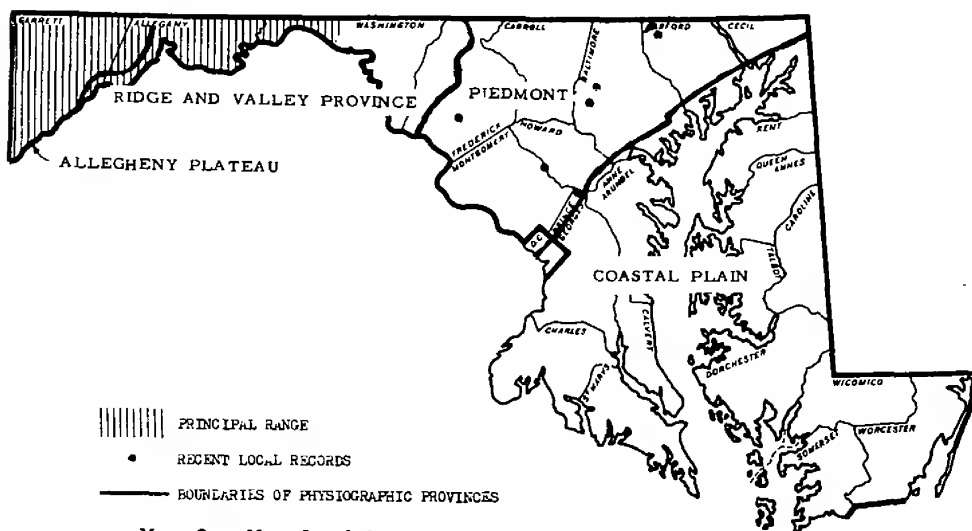
Map 1. Breeding range and spring migration of the Cliff Swallow

Fall migration. The swallows as a family are the earliest fall migrants of all the passerine birds, and the Cliff Swallow is no exception. For example, in the Middle Atlantic States the southward movement begins about July first and ends in early September, most of the birds passing through between July 10 and September 5 (Stewart and Robbins, 1958). In places where these birds are common fall migrants, huge flocks numbering into the thousands of birds are sometimes seen; this is true, for example, in the Appalachian Mountains (Brooks, 1949).

Winter. Cliff Swallows winter from southern Brazil south to central Chile and central Argentina (American Ornithologists' Union, 1957). There are, however, a few winter records from southern United States.

Breeding Status of the Cliff Swallow in Maryland*

Maryland is naturally divided into four physiographic regions, as shown on Map 2, and it is with reference to these regions that the nesting range of our bird will be described.



Map 2. Maryland breeding range of the Cliff Swallow

Allegheny Plateau. The Cliff Swallow has been a common breeding bird in this region since the ornithological investigation of the area began. Edward A. Preble (1900), who explored this area in 1899, noted the bird in the vicinity of "nearly every farmhouse" on the higher ridges. He also reported "great numbers" of nests in several colonies. Colonies were noted at Oakland and Accident in 1919 and 1920, and in the 1930's at Redhouse (Kirkwood, 1925, and Brooks, 1936). The species continues as a common breeding bird at present; Brooks (1957), however, reports a current decrease in the numbers or sizes of colonies.

* Taken from Birds of Maryland and the District of Columbia by Stewart and Robbins except where otherwise acknowledged.

Ridge and Valley Province. A complete lack of breeding records from this section of the State until recently (Hampe and Kolb, 1947) undoubtedly results from a lack of observers, as the bird nests fairly commonly in the western part, but is uncommon and local in the east.

Piedmont--Northern section. The Cliff Swallow was formerly a common summer bird in Baltimore and Harford Counties. In the 1880's and early 1890's "nearly if not every barn of any size in the country round Baltimore was decorated with a profusion of nests" (Kirkwood, 1925). However, the birds began to decline in numbers and by 1895 the Cliff Swallow was "an extremely local and uncommon summer resident" (Kirkwood, 1895); the last colony disappeared in 1902. Apparently the bird did not nest again in the northern Piedmont until 1924, when Kirkwood (1925) discovered a colony north of Baltimore. The only recent instances of breeding appear to be two single nests located by Brooke Meanley in 1948 in western Baltimore County, and two nests discovered by Orville Crowder in 1955 in northwestern Harford County.

Piedmont--Southern section. The Cliff Swallow apparently was never a common nesting bird in the southern section of the Piedmont. There appear to be no breeding records for Howard and Montgomery Counties. (Short-time colonies probably existed but escaped observation.) In Washington, D. C., Coues and Prentiss (1862, 1833) reported it as a nesting bird but not a common one because of the lack of suitable nest sites. Maynard (1902) listed it as a rare summer resident, and Wells Cooke (1908) and May Cooke (1929) as a rare migrant only. The writer observed single birds at Brighton Dam on June 8, 1957 and in early July, 1955--dates that suggest breeding. These two occurrences appear to be the only indications of breeding in this section until 1958.

Coastal Plain. The Cliff Swallow has been known to nest only once on the Coastal Plain of Maryland: a colony was discovered near Hyattsville in 1898 by Edward J. Court.

1958 Range Extension in Maryland

We have said that the Cliff Swallow as a breeding bird in the Maryland Piedmont is rare and local. On June 29, 1958, however, the writer located an active nest on that part of Rocky Gorge Dam lying in Prince Georges County. The nest, which was at the top of a vertical section of the dam under the walkway, was revisited several times during July and August by Chandler S. Robbins, Ted Stiles, and the writer. Three young left this nest some time between July 19 and July 26. The adult birds had completed a second nest by the latter date. The success of the second attempt was not definitely determined, but an adult and four young that were sitting on the dam on August 23 very likely represented a second successful brood. This nesting record appears to be the first for the county since 1898.

The writer also observed at least one pair of Cliff Swallows throughout the summer of 1958 at Brighton Dam. (Rocky Gorge and Brighton Dams are located on the Piedmont about two and eleven miles, respectively,

above Laurel on the Patuxent River.) A definite nesting record represented by eggs or downy young could not be secured because of inaccessibility of the nest; however, the actions of the birds indicated that they had a nest on the Montgomery County end of the dam, with about fifty Barn Swallow nests. Young birds were seen in late July and early August, but these may have been migrants. There appear to be no previous nesting records of this species from Montgomery County.

On June 29, 1958, Miss Shirley A. Briggs observed an adult bird and an incomplete nest near Buckeystown in southeastern Frederick County. A check later in the summer showed the nest in the same condition (Briggs, 1958). Cliff Swallows formerly nested in Frederick County but apparently have not done so for many years.

Nest Construction

Cliff Swallow nests are built of mud, which the birds gather from any supply at hand, provided it is of sufficient cohesiveness to hold together without benefit of binding material, such as string or grass, which is not commonly used. The mud is gathered by the birds as they stand at the edge of the puddle or hover above it on rapidly beating wings; the mud is shaped in the mouth into pellets the size and shape of peas. These the birds plaster together on almost any vertical surface adequately protected from rain and rough enough to provide adhesion. Such nesting sites may be cliffs, barns, dams, or similar structures. Both adults work at the task and, should the weather be fair, they may finish it in four or five days. If a storm interrupts the progress, however, construction may require as much as fifteen or even twenty days. In such cases the female may lay her eggs before the nest is completed.

In its most advanced design the nest is a bottle-shaped affair, often with a neck several inches long projecting outward and downward, and serving as a tunnel for entrance and exit. Frequently, however, this neck is lacking, and in many cases the nest is an open cup-shaped structure like that of the Barn Swallow. Unlike that bird, however, the Cliff always fastens its nest to a vertical surface.

Eggs and Young

From three to six, but usually four or five, creamy or white eggs, spotted with brown are laid; the female depositing one each day. Incubation begins after the last egg has been laid and requires about fourteen days, the male assisting. The young remain in the nest about fourteen to sixteen days, during which time they are fed soft-bodied insects, both birds taking part in the feeding duties. Should the young be reluctant to leave the nest when the time comes, the old birds may, if coaxing fails, break up the nest, thus forcing them to try their wings (Forbush, 1929).

The birds seem to have no fixed rule regarding the number of broods raised in one season. The usual number is probably two, but in many cases it is only one, and rarely, three (Bent, 1942).

Other Uses of the Nest

The nest of the Cliff Swallow offers protection from the weather, and often is so well built that it lasts for several years, sometimes being used repeatedly by the same birds, or by other Cliff Swallows. It is not surprising, then, that it is sometimes appropriated by birds of other species. Among these are the House Sparrow, which may take over the nest before or after the Cliff Swallows lay their eggs. Other species that have been known to use old Cliff Swallow nests as places to raise their own broods are: Plain Titmouse (Sibley, 1940), Chestnut-backed Chickadee (Dixon, 1954), and Say's Phoebe (Sooter, Bennington, and Daniels, 1954). Different species have also been found using Cliff Swallow nests as night roosting places: Gray-crowned Rosy Finch, Black Rosy Finch, and Cañon Wren (*ibid.*). William Kirsher, of Sacramento, found a Screech Owl occupying a nest, but he was unable to determine whether or not the bird was attempting to raise a brood (Briggs, 1955).

Hybridism

Cliff Swallows on rare occasions mate with birds of other species, and the offspring of such misalliances exhibit plumage markings of both adults. Hybridism between the Cliff and Barn Swallows has been recorded twice and between Cliff and Tree Swallows once (Cockrum, 1952). It is interesting to note that in these cases the unions took place between birds of different genera; hybridism oftener than not takes place between congeneric individuals. On July 25, 1958, the writer observed at Brighton Dam in Maryland what was probably a hybrid between the Barn and Cliff Swallows. The bird, which was seen among a mixed flock of migrant Bank and Barn Swallows and nesting Barn and Cliff Swallows, was seen on one occasion only. It had the short outer tail feathers and orange rump of the Cliff Swallow and the white tail spots of the Barn; the underparts were not observed.

Economic Value

The economic value of the Cliff Swallow must be assessed from the standpoint of the role of the bird as a destroyer of insects. Beal (1918) examined the contents of 375 stomachs of birds taken in every month from March to September and found that the birds fed almost entirely on animal matter, consisting mostly of insects of the following orders (the number being the percentage of the total animal food): Coleoptera (beetles), 26.88; Hymenoptera (wasps, bees, ants, etc.), 28.75; Hemiptera (bugs, cicadas, leafhoppers, etc.), 26.32; Diptera (houseflies, gnats, and mosquitoes), 13.95; Orthoptera (crickets, grasshoppers, cockroaches, etc.), 0.71; and Lepidoptera (butterflies, moths, skippers, etc.), 0.46. The remaining animal food (2.93 percent) consisted of other insects, such as lace-winged flies, May flies, and dragonflies, a few spiders, a snail, and pieces of egg shell.

Many species of insects were harmful to the interests of man, some of them highly destructive to crops. These species included some eaten in large quantities: the chinch bug, which destroys as much as millions

of dollars in wheat, and the boll weevil, enemy of the cotton farmer. In order to determine the extent to which the swallows fed on the latter pest, thirty-five stomachs were collected in the vicinity of a Texas cotton farm. It was found that the birds had eaten an average of nineteen weevils, with some counts running as high as forty-two and forty-eight insects in a stomach. Fifteen other species, including the alfalfa and rice weevil, were found in the stomachs of these birds.

Of insects beneficial to the interests of man only a few were found in the 375 stomachs; and such consumption was held to have "practically" no effect. Thirteen stomachs contained the remains of thirty-five honeybees--in every case drones, the eating of which is not held against the birds by the apiarists.

It will be seen that the Cliff Swallow is a valuable ally of the agriculturalist, destroying as it does great numbers of harmful insects and few that are beneficial. This bird is certainly entitled to protection and encouragement.

The Cliff Swallow's Enemies

The Cliff Swallow has many enemies, some of which do not seem of much importance. Among its chief disturbers are man and the House Sparrow. The former has destroyed countless nests of the bird in the erroneous belief that they disfigured his barns, and that the bird was host to the bedbug. The "feathered rat" as we have seen, has been a decided factor in the reduction of the numbers of this species.

Among parasites harbored by the swallows are various species of ticks, fleas, and bird lice (Baerg, 1944). Among these parasites is one that greatly resembles the bedbug but that is a different species (Beal, 1918). The House Finch (Shepardson, 1915) and the Brown-headed Cowbird (Butler, 1898) have been known to place their eggs in the active nests of the Cliff Swallow but such instances of parasitism probably are rare. Predatory animals do not seem to be important in the ecology of the Cliff Swallow.

The weather is doubtless of considerable importance in the survival of the species. Unseasonably cold weather or prolonged rainy spells deprive the swallows of food by driving to cover the insects on which they feed. Mortality, especially among nestlings, must be considerable during periods of unfavorable weather.

The Future of the Species

At present the Cliff Swallow is still uncommon as a nesting bird in many eastern states. There are indications, however, that the bird is increasing again in many areas. Recently it has taken up residence on the concrete surfaces of dams, culverts, bridge piers, and even public buildings. As man's needs for water and for highways increase, we may expect to find the Cliff and other swallows nesting increasingly on and about the dams and bridges that must be built.

That the Cliff Swallow will increase in numbers is indicated by several recent extensions or reextensions in its breeding range. Recently the species has definitely become established in Tennessee as a breeding bird; the first breeding record for that state was secured in 1936 (Ganier and Weakley, 1936), and several good-sized colonies have since been found. The first breeding record for Mississippi was obtained in 1954 (Newman, 1954); and in 1955 the species was found breeding in Alabama for the first time since 1913 (Newman, 1955). Although it falls outside the scope of this article, it is interesting to note that the Bank Swallow and the northern population of the Barn Swallow also are experiencing a southward range extension. In 1955 the former species nested in Alabama for the first time since 1895, and the latter "is consolidating its foothold" in the northern part of the same state (*ibid.*). Furthermore, a colony of Barn Swallows near Iuka, Miss. in 1954 constituted the "second group nesting" of that species in the northern part of Mississippi (Newman, 1954). All three species were found nesting on dams, bridges, or culverts.

Other areas in which Cliff Swallows are increasing, or nesting in places where they have not done so recently, are Lewis County, N. Y., western Connecticut (Nichols, 1956); eastern Massachusetts (Morgan and Emery, 1954); and the Valley of Virginia (Murray, 1957).

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6512 Westmoreland Avenue, Takoma Park, Md.

FIRST NESTING OF HERRING GULLS ON THE MARYLAND COAST

G. Ellis Miller

On June 27, 1958, Neil Hotchkiss and I paid a visit to Chincoteague Bay. Our first stop was at Robins Marsh where we estimated that between 250 and 300 Forster's Terns were nesting. This was somewhat fewer than the number of birds we expected to see. It may be that a cardboard box containing 7 or 8 dozen eggs that we found on the island was the answer to the decrease in numbers.

Next we visited the southern South Point island. A bit to the right of our landing point on the western side of the island a small tree had beached. Near this tree, about 4 feet above the water level, was a shelf

of land where a Herring Gull (Larus argentatus) had a nest with 2 eggs and a young bird just out of the shell. At the northeast side of this island is a finger of sandy soil extending out into the bay, with a beach on the island proper bordered with marsh grass. A few feet from the beach, surrounded by marsh grass, is a bare spot about 15 feet long and 6 feet wide. On this spot a colony of perhaps 300 Royal Terns were nesting. The young and eggs were in all stages of development from fresh eggs to half-grown young. A few feet from the colony of Royal Terns, and at the edge of the beach border of marsh grass, was another Herring Gull nest. This nest contained 2 eggs. The larger egg measured $75\frac{1}{2}$ mm. x $52\frac{1}{2}$ mm.; the other, 73 mm. x 51 mm. They were a dark olive color spotted and blotched with burnt umber, ochre, dark gray, and several shades of brown.

On July 2, Robert E. Stewart, Chandler S. Robbins, and William Kiel visited this island. They found one egg and one newly hatched young in the first nest and banded this young bird. They did not find the older chick but it may have been hiding nearby in the thick vegetation.

On the western side of the adjacent island a pure white Herring Gull circled above us, anxiously uttering soft calls. We looked for a nest but did not find it. On July 5, however, Robert McCartney located a young bird on this island, confirming the nesting of three pairs of Herring Gulls on these Chincoteague Bay islands. These islands are visited annually by Maryland ornithologists and there has been no previous indication that they have been used by nesting Herring Gulls.

I understand that the Sharp's Island colony in Chesapeake Bay, first discovered by Richard Kleen in 1955 (Maryland Birdlife 12: 3), is still active despite the rapid erosion of the island. Harry Armistead visited the island on July 1 of this year, found a total of 8 Herring Gull nests, and banded 5 chicks.

4414 Gridley Road, Viers Mill Village

SHOREBIRD CONCENTRATIONS IN CAROLINE COUNTY

Samuel H. Dyke

The heavy rains that fell on the Eastern Shore during the fourth week of August caused extensive flooding of croplands, especially in Caroline County, Maryland, and Kent County, Delaware, where weather stations reported from 9 to 11 inches of rain on August 25-26. Excellent conditions for shorebirds were present when a cold front moved across the region on August 30.

The following counts of shorebirds were made within an area of about one square mile of open land with several shallow ponds, each about one acre in size. The area lies about three miles southeast of Greensboro. The August 28 count was taken during the period when the stationary low pressure area off the coast was still blanketing the Eastern Shore with rain. The September 3 count was made after the cold front had moved into

the region, bringing clearing skies and northwest winds. On September 16, despite the fact that the rain-filled pools had dried to the point of being little more than boggy spots, an interesting group of shorebirds was present.

<u>Species</u>	<u>August 28</u>	<u>September 3</u>	<u>September 16</u>
Semipalmated Plover	--	6	4
Killdeer	30	30	26
Am. Golden Plover	1 (imm.)	19 (adults)	32
Ruddy Turnstone	--	--	1
Solitary Sandpiper	--	1	--
Greater Yellowlegs	10	10	4
Lesser Yellowlegs	30	358	1
Pectoral Sandpiper	20	52	64
White-rumped Sandpiper	--	4	--
Least Sandpiper	10	20	--
Short-billed Dowitcher	5	16	--
Stilt Sandpiper	--	1	--
Semipalmated Sandpiper	--	50	6
Western Sandpiper	--	10	--

During this period, I observed shorebirds in flooded fields in many other sections of the Shore, indicating that the movement may have been widespread. Flocks of Blue-winged Teal also were observed frequently on these temporary ponds; the largest flock contained 50 birds.

309 Princeton Avenue, Salisbury

RING-BILLED GULLS ROBBING COMMON MERGANSERS

Marvin Hewitt

On February 4, 1957 I saw a rather curious incident. While watching birds on Williston Lake near Denton, Maryland I noticed something that attracted by attention. After close observation I was rather surprised to see Ring-billed Gulls (Larus delawarensis) swimming among Common Mergansers (Mergus merganser). The reason for this became apparent when I saw the mergansers diving for fish. As they would surface, the gulls would chase the "Gooseanders" and relieve them of their quarry. This occurred several times and I wonder if other observers have ever seen this happen.

Greensboro

SHOREBIRD CONCENTRATIONS IN KENT COUNTY

Dan Gibson

On September 9, 1958, while visiting Remington Farms, I found a White-rumped Sandpiper, the first I had ever seen here in Kent County.

I returned on the following morning with Mrs. Mary Paschall and was overwhelmed by the numbers of shorebirds present. We revisited the area on several subsequent days, with the following results:

Species	S e p t e m b e r					
	9	10	11	12	13	14
Semipalmated Plover	--	4	1	1	1	1
Killdeer	12	15	12	12	X	X
Black-bellied Plover	--	--	--	--	--	2
Common Snipe	--	--	--	2	--	--
Greater Yellowlegs	1	5	--	1	--	--
Lesser Yellowlegs	10	10	7	6	X	X
Pectoral Sandpiper	--	5	4	4	X	X
White-rumped Sandpiper	1	1	--	--	--	--
Least Sandpiper	3	11	8	8	X	X
Stilt Sandpiper	--	6	6	6	6	3
Semipalmated Sandpiper	--	20	10	10	X	X
Western Sandpiper	--	2	1	2	--	--

The Stilt Sandpiper, another new species for Kent County, was last seen on September 18 when 2 individuals were present.

Water Street, Chestertown

A BROAD-WINGED HAWK FLIGHT OVER THE TALBOT COUNTY NECKS

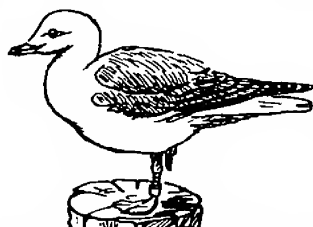
A. J. Fletcher

On September 23, 1958, at 9:30 a.m., E.D.T., as I drove from Bellevue to Royal Oak on a perfectly clear morning with a gentle northerly breeze, I observed a large flock of about 100 birds, which I took to be gulls, milling about over the narrow strip of land. When I came closer they looked more like vultures—but I never saw such a large flock of vultures. Then I realized they were hawks. I stopped directly under them; some of them were less than 500 feet high, and they were clearly Broad-winged Hawks (Buteo platypterus). They were flying nearly due west over the southern edge of the village of Royal Oak.

Thinking I had observed the largest flight of Broad-winged Hawks for the season, I started to return to my car. Then I saw two more similar flocks drifting over the finger-like peninsulas that comprise this part of Talbot County. In a few minutes still another flock drifted over me from the east. I could see perhaps eight miles of the sky the hawks were occupying. Unfortunately, I was not able to take time to follow the flight westward to find out what the hawks did when they reached the east shore of Chesapeake Bay. My estimate for the minimum observed is 250, though many more were probably in the milling, uncountable masses of hawks.

R. 1, Box 201, Denton

BIRD



BANDING

BANDING RECOVERY ADDS HOUSE FINCH TO MARYLAND LIST

E. Wayne Marshall, M.D.

December 28 and 29, 1957, were red letter days at our Ardmore, Pennsylvania banding station because we had the good luck of banding a Dickcissel (Spiza americana) and a House Finch (Carpodacus mexicanus). I had never seen a House Finch before and the illustrations in our bird books were a little too small, so I took the bird to Joseph M. Cadbury who reassured me and confirmed the identification. When we had the bird indoors, she chirped very musically not unlike a canary and much prettier than a House Sparrow.

The House Finch or "Linnet" is a common bird in the far western part of the United States. This bird was introduced on Long Island, New York, and in 1952 it first spread into Connecticut and the mainland of New York (Audubon Field Notes 6: 185, 240). There are published records in Cassinia for both Pennsylvania and New Jersey for the years 1955, 1956, and 1957.

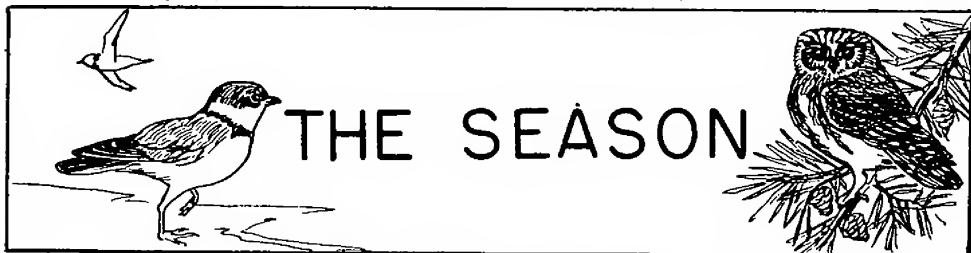
From January 4 to March 1, 1958, we banded 20 more House Finches and 3 of these were adult males. Seven of these birds made 10 repeats in my traps. They were not seen again after March 1, 1958. I banded 98 Purple Finches during the winter and it was very interesting to compare the two species side by side. The Purple Finches always tried to bite, while the House Finch would sit still when being picked up in a cage.

House Finch No. 59-13621 was banded on January 4, 1958 at Ardmore, Pa. It repeated on February 8, 1958 and was shot by a boy at Havre de Grace, Maryland on April 6, 1958. This is the first time that a banding record has added a new bird to the Maryland list.

It seems most likely that the Pennsylvania, New Jersey, and Maryland House Finches are birds that have spread out from the Long Island population, rather than birds from the Rocky Mountains or farther west.

Incidentally, the Dickcissel had 3 repeats at my banding station, the last one on February 15, 1958. It was killed by a trolley car about two miles from here on March 8, 1958.

140 Cedarbrook Road, Ardmore, Pa.



JULY, AUGUST, SEPTEMBER, 1958

Chandler S. Robbins

There was no cool snap in July to stimulate the early migrants; in fact, the minimum temperature at Friendship International Airport did not drop below 60° until Aug. 19. Swallows began their migration in July as usual. Except for a few of the warblers, however, there was no other noticeable movement of passerines until Aug. 27, when the mercury dipped below 60° for the second time.

The principal contributors to the migration tables were as follows: Washington County: Alice Mallonee; Montgomery County: Katherine Goodpasture, Walter Booth, Seth H. Low; Prince Georges County: Ronald Feller, David Bridge, Chandler Robbins, Robert Stewart; Anne Arundel County: Vera Henderson, Elise Tappan; Caroline County: Marvin Hewitt, Roberta Fletcher, Alicia Knotts; Talbot County: W. M. Davidson, Richard Kleen; Calvert County: John Fales, Friel Sanders; Lower Eastern Shore: Samuel Dyke, Chandler Robbins, Gordon Knight, Gladys Cole, Hank Kaestner.

Grebes, Shearwaters and Petrels, Cormorants. An unusually late nesting of the Pied-billed Grebe was recorded at Patuxent Refuge, where Robert E. Stewart found a brood of 5 downy young, not over half grown, on Sept. 22. A single bird of this species that arrived on Greenbelt Lake on July 27 is considered an early fall migrant (Ronald Feller and David Bridge). Mrs. W. L. Henderson and Mrs. G. Tappan saw a Horned Grebe at Gibson Island on the early date of Aug. 26. As the Horned Grebe normally does not arrive until October, the Gibson Island bird probably was a summer vagrant rather than a true migrant. The two pelagic species that occur regularly off the Maryland coast during our summer season, the Cory's Shearwater and the Wilson's Petrel, were seen in good numbers by Daniel D. Gibson and Dr. Daniel Z. Gibson while they were marlin fishing off Ocean City on July 30. The Cory's Shearwater nests on Portuguese and Spanish islands in the eastern Atlantic, and the Wilson's Petrel is the only Maryland bird that nests on the Antarctic continent. Walter Booth saw an unusually early Double-crested Cormorant in immature plumage at Triadelphia Reservoir on Aug. 5. In the Chesapeake Bay area, where small numbers of this species summer, Thomas Imhof saw one on July 22.

Hérons and Egrets. Harry Armistead obtained the second Dorchester County record for the Cattle Egret when he saw one at Crocheron, south of Bishop Head, on June 30. Many of the Mills Island birds used the

Table 1. Fall Arrival Dates, 1958

<u>Species</u>	<u>Wash</u>	<u>Mont</u>	<u>Pr.G</u>	<u>Anne</u>	<u>Caro</u>	<u>Talb</u>	<u>LES</u>
Common Loon	--	9/19	--	9/28	--	--	9/14
Double-cr. Cormorant	--	8/ 5	--	8/29	--	--	7/27
Spotted Sandpiper	--	7/28	7/26	--	--	--	7/27
Solitary Sandpiper	--	8/ 2	8/26	--	--	--	7/27
Common Nighthawk	--	8/13	7/30	8/16	--	--	--
Red-headed Woodpecker	--	9/12	9/29	--	--	--	9/19
Blue Jay	9/14	9/19	9/25	9/29	--	--	--
Brown Creeper	10/23	--	10/11	--	9/29	--	9/13
Veery	9/ 7	--	--	--	--	9/ 3	9/ 6
Ruby-crowned Kinglet	10/ 1	10/ 4	9/29	9/29	9/30	--	9/11
Magnolia Warbler	9/ 3	9/ 3	8/26	--	9/11	9/ 9	9/ 8
Cape May Warbler	--	8/28	9/18	--	--	9/ 3	9/ 8
Black-thr. Blue Warbler	9/14	8/31	9/ 2	--	--	9/ 2	9/ 8
Black-thr. Green Warbler	--	8/23	8/26	9/22	--	--	9/ 9
Blackburnian Warbler	--	9/13	8/27	--	9/11	--	--
Chestnut-sided Warbler	8/26	--	8/23	8/23	--	--	--
Bay-breasted Warbler	--	8/23	9/10	--	--	--	9/ 8
Blackpoll Warbler	10/ 4	9/ 4	9/28	9/24	9/29	--	9/ 8
Palm Warbler (Western)	--	--	9/22	9/22	--	--	9/ 8
Northern Waterthrush	8/24	9/ 7	8/26	8/11	9/ 5	9/ 5	9/ 5
Mourning Warbler	--	--	8/26	--	--	9/ 6	9/ 9
Canada Warbler	--	8/23	8/ 9	8/23	--	9/ 2	9/ 8
American Redstart	9/10	8/23	8/ 9	8/ 9	--	8/28	--
Bobolink	--	8/27	8/23	--	--	7/ 5	7/10

Table 2. Fall Departure Dates, 1958

<u>Species</u>	<u>Wash</u>	<u>Mont</u>	<u>Pr.G</u>	<u>Anne</u>	<u>Caro</u>	<u>Calv</u>	<u>LES</u>
Yellow-billed Cuckoo	9/30	--	9/26	9/ 8	9/30	10/ 7	--
Black-billed Cuckoo	--	--	9/28	--	9/30	--	9/19
Common Nighthawk	--	9/13	8/25	--	9/25	--	--
Ruby-throated Hummingbird	8/26	--	9/ 3	--	9/27	8/31	9/17
Eastern Kingbird	8/25	8/23	9/20	9/20	9/12	9/ 7	9/20
Great Crested Flycatcher	9/22	--	8/27	9/ 4	9/ 3	9/ 5	9/20
Yellow-bellied Flycatcher	--	9/11	9/ 6	--	--	--	9/13
Acadian Flycatcher	--	9/11	9/ 2	9/ 3	--	8/26	9/ 9
Barn Swallow	9/ 4	9/11	9/16	9/ 8	--	8/15	9/16
Purple Martin	8/ 8	9/11	9/16	8/31	--	8/28	9/ 7
Yellow-throated Vireo	--	--	9/ 6	--	9/ 3	9/13	9/21
Chestnut-sided Warbler	9/ 5	--	9/27	9/29	--	--	--
Prairie Warbler	9/15	--	9/20	9/22	--	8/27	9/21
Northern Waterthrush	--	9/19	--	9/25	--	--	9/21
Yellow-breasted Chat	--	9/ 9	8/26	10/ 6	--	9/ 4	9/20
Hooded Warbler	9/12	--	9/26	--	--	--	9/20
Canada Warbler	--	9/ 6	9/ 6	9/ 3	--	--	9/21
Summer Tanager	--	9/ 6	9/ 2	10/ 1	9/29	--	9/14

nesting colony as a late summer roost. Jacob Valentine counted as many as 71 Cattle Egrets there on Sept. 7, and Frederic Scott estimated 750 Little Blue Herons there on Sept. 14. A Common Egret that was banded as a nestling on one of the South Point islands on July 2, 1958 was found dead on Mills Island by Valentine on Aug. 23. While taking a canoe trip on the Potomac River on July 19-20, Feller and Bridge found an immature Snowy Egret below Hancock—the first Maryland record west of the Piedmont. At Rocky Gorge Reservoir above Laurel, Booth saw 2 immatures on July 27 and 1 on the 30th; these are the first to be reported from Howard County. Brooke Meanley and Robert Stewart saw a Louisiana Heron in the Patuxent marsh in Anne Arundel County near Lyons Creek on Sept. 27, tying the latest Maryland departure date.

Hawks. The September hawk migration was disappointing in that poor flying weather on weekends prevented observers from seeing the peak of the Broad-wing flight. The only counts of more than 20 Broad-wings were of 250 at Royal Oak on Sept. 23 (A. J. Fletcher), 550 at Lutherville on Sept. 24 (Marge Murison), and 204 near Emmitsburg on Sept. 25 (John W. Richards). The paucity of Bald Eagle reports is causing some concern; only 2 birds were reported away from tidewater: 1 at Rocky Gorge on Aug. 23 (Booth) and 1 at Denton, Sept. 13 (Alicia Knotts).

Shorebirds. The storm of Aug. 23-24, which brought more than 7 inches of rain to parts of Caroline and Talbot Counties and over 5 inches to Chestertown, set the stage for what appears to be the best shorebird flight recorded in the non-tidal areas of Maryland. Dan Gibson's counts at Chestertown and Samuel Dyke's counts at Greensboro are published elsewhere in this issue; the Greensboro area was visited on other days by Roberta Fletcher, Marvin and Naomi Hewitt, and Wilbur Rittenhouse, who turned in the following counts that equal or exceed those of Dyke: 10 Semipalmated Plover on Sept. 10; 32 Golden Plover on Sept. 9; 1 Ruddy Turnstone on Sept. 9 (M. Hewitt) and Sept. 10 (Fletcher), the first Caroline County record; and 6 Common Snipe on Sept. 3 and 28 on Sept. 30. Harry Armistead saw 4 Lesser Yellowlegs at Elliott on July 10, which is two days ahead of the earliest previous fall arrival date for the State. Mrs. W. L. Henderson commented that a Willet that was seen on Aug. 25 and Aug. 26 was the first ever recorded on Gibson Island. Harold Weirenga spotted the second Maryland sight record of the Buff-breasted Sandpiper at Sandy Point State Park on Sept. 2; he showed the bird to many other Annapolis members, and saw it last on Sept. 7.

Terns. The Forster's Tern is regarded as casual in the Maryland Piedmont, but three observations by Walter Booth indicate that it may occur more frequently than generally is believed. He noted 1 individual at Triadelphia on Aug. 29, 2 at Seneca on Sept. 21, and 2 at Triadelphia on Sept. 28. Other inland tern records were of single Black Terns at Seneca on July 28 and Sept. 21 (Booth); 1 Common Tern there on the latter date (Booth); and a Caspian Tern over Laurel on Aug. 31 (Robbins). Armistead reported a summer vagrant Caspian Tern at the mouth of the Choptank River on July 1, and Mrs. Henderson and Mrs. Tappan identified a Royal Tern as far up the Bay as Gibson Island (5th local record) on Aug. 25.

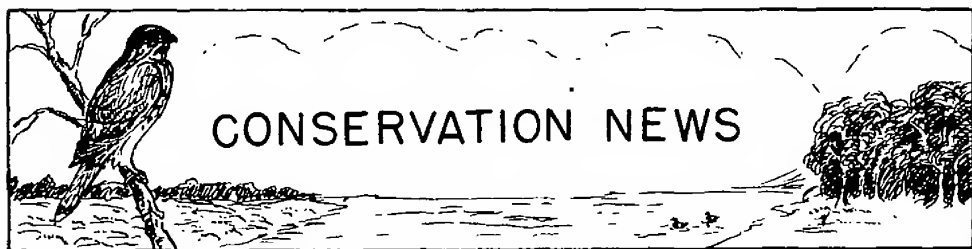
Flycatchers. Barnie Bauer, Edith Adkins and others had a Western Kingbird under observation all day on Sept. 16 at Ocean City—the third consecutive year that this species has been found there in mid-September. Sept. 9 was the top day for Empidonax flycatchers at the Ocean City netting station; on this date Robbins banded 6 Yellow-bellies, 1 Acadian, 7 Traill's (a new one-day high for this species), and 4 Least Flycatchers. Another Traill's Flycatcher that was banded on Sept. 19 at Ocean City is the second latest on record for Maryland.

Thrushes. Several observers remarked on the scarcity of thrushes, but this scarcity was not evident at the coastal concentration points; 149 thrushes of 4 species (including 59 Veeries) were banded at Ocean City on the peak day, Sept. 9. A very early Swainson's Thrush was banded at Laurel on Aug. 23, the earliest Maryland migrant except for one banded there on Aug. 18, 1957 (Robbins). A record early Gray-cheek was banded at Towson on Aug. 28 (Gladys Cole).

Warblers. A number of correspondents complained of the small numbers of transient warblers this fall. Whether the reported scarcity was real or just apparent cannot be determined. Although it may be dangerous to draw conclusions from the banding records at a coastal concentration area, no other comparative figures are available. The number of warblers taken per net-hour at Ocean City was within 10% of last year's total. The only common species to register as much as a 50% drop were the Cape May and the Blackpoll. Noteworthy one-day high counts at the Ocean City netting station were: 20 Ovenbirds and 12 Northern Waterthrushes on Sept. 9, 11 Yellow-breasted Chats on Sept. 19, and 3 Wilson's Warblers on the 21st (Robbins, Fletchers, Cole).

Blackbirds, Orioles, Tanagers. There were two record early Bobolink reports, both from the Eastern Shore. A singing male appeared in a wheat field in front of Harry Armistead's home near Bellevue on July 5, but was not seen subsequently; the other bird was found at Cambridge five days later (Brooke Meanley). An extraordinary concentration of Baltimore Orioles occurred at the Ocean City netting site on Sept. 9; 57 individuals were caught and banded, and at least 5 others were seen. On June 30 Armistead watched a pair of Boat-tailed Grackles feeding 3 well-grown young at Bishop's Head in southern Dorchester County, indicating the probability of nesting there. Mrs. Douglas Miner saw a Summer Tanager at Sherwood Forest, Oct. 1, breaking the latest Maryland date.

Sparrows. On Sept. 10, Dan Gibson and Mrs. Mary Paschall flushed a Sharp-tailed Sparrow from the Eastern Neck Island marsh; although this occurrence was not unexpected it represents the first Kent County record for this sparrow. We have become accustomed in recent years to finding a few Dickcissels along the barrier beach each autumn, but in the past all reports have been of single birds. This year the Ocean City banders were surprised by a flock of 3 Dickcissels that alighted in a tree directly above them on Sept. 20. Another vagrant from the west that we are coming to accept as a regular fall visitor to our coast is the Lark Sparrow; one individual, which Gordon Knight discovered north of Ocean City on Sept. 8, remained in the area throughout the day.



SANCTUARIES ARE LIVING THINGS. PART II.

Sterling W. Edwards

How Do We Acquire A Sanctuary?

We showed in the last issue that a Sanctuary is an eminently desirable thing for the M. O. S. to possess, and we should now discuss how one is acquired. As mentioned, the Sanctuary Committee (SC) had viewed three possible areas: the 33 acre Rohrer tract on Elk Ridge in Washington County; the 106 acre piece, still pending, on Catoctin Mountain, where no buildings would be permitted; and the 100 acre Crowder property, which has been turned down because the price of \$80.00 an acre is too high in the opinion of SC members for our present and prospective finances.

During November we viewed a very desirable 19 acre tract near Ellicott City, and we shall learn in January whether this area will be a free gift. We also viewed a 49 acre tract in the same general area, but no decision on this has been reached.

Thus in the course of seven months the 1958 SC has very carefully looked into five desirable bird sanctuaries, and their advantages and disadvantages; there are still several tracts on our viewing schedule.

FUNDS. Now, as everybody knows, you start a long Journey with just One Step. We want to acquire Sanctuaries wherever and whenever circumstances may permit through gift, bequest or by purchase within our means; and we want at least some of these to be within easy reach of the larger urban areas. We already have a sizable Sanctuary Fund. Several members have expressed their wish to help make the first purchase. We are sure others will be inspired to do likewise. When we acquire a Sanctuary by purchase, the money will come from each and every one of us, as his interest and financial condition dictate. Once started we can approach outsiders. Several members will probably be able to interest Maryland corporations or individuals outside of our membership.

Gifts will be asked of the entire membership eventually. We will need gifts of time, intellect and labor to plan and make trails, demonstration area signs, buildings, etc. Life memberships payable in three installments go toward sanctuary purchase and maintenance. We will need

cash gifts for Sanctuary purchase and development. We will need endowment funds, the principal of which will go on forever accruing interest to meet Sanctuary expenses.

We might start with one area, preferably within fifty miles of Baltimore. Considering our finances, we hope it will be an outright gift. Our present funds really are needed to increase the endowment fund and to provide a building. On at least one Sanctuary, we believe facilities should be supplied for a small museum, small library and storage place, clearings for tents and parking, and perhaps a caretaker's home and cabins or shelters for camping.

We hope that classes, lectures, and field trips in our first Sanctuary will engender enough interest to enable us to increase our property holdings rapidly. We hope also that most of our Sanctuaries can be larger than fifty acres and that they can include relatively natural habitat. But we can start on a smaller scale.

Grindstone Run Farm, Myersville

CONSERVATION IN 1958

This year we celebrated the one hundredth anniversary of President Theodore Roosevelt's birth. He and his head of the Forest Service, Gifford Pinchot, coined the word "conservation." This year is also the hundredth anniversary of the birth of our great botanist and horticulturist, Liberty Hyde Bailey.

There are a number of organizations that have ideas harmonious to those of our Maryland Ornithological Society. One of these is the National Wildlife Federation, 232 Carroll St., N.W., Takoma Park 12, D.C. "The purpose of the Federation is to preserve those resources on which our country grew--and to protect the wildlife which cannot protect itself. It is a non-profit, non-political organization. Its only income is the contributions from far-seeing citizens in return for Wildlife Conservation Stamps."

Ding Darling painted the first Wildlife Stamps in 1938. These stamps now are the chief support of several outstanding projects. The National Wildlife Federation and State affiliates offer a number of scholarships and fellowships in conservation and conservation education. There are \$500 undergraduate scholarships at Johns Hopkins, and graduate special student fellowships up to \$1,000. For these advanced fellowships the scholar need not necessarily be enrolled at a college. In addition to the regular large stamps the National Wildlife Federation has recently begun to issue small-sized Christmas stamps, Wildflower stamps, and Song-bird stamps. Some of America's foremost artists paint the pictures. Roger Tory Peterson is the art director.

Ernest Swift, Executive Director of the National Wildlife Federation, follows his 1957 pamphlet entitled "By which we live" by another

fine interpretation of natural resource problems. This 1958 pamphlet is entitled "The Glory Trail: the great American migration and its impact on natural resources."

Those who wish to keep abreast of what is going on in Congress can obtain a free publication of the National Wildlife Federation, "Conservation Report." Those who want a more detailed, somewhat tardier discussion of important conservation news on all fronts can get on the list to receive "Conservation News."

Let us see what "Conservation Report" has to tell us about some Congressional happenings in 1958:

Next year all funds obtained from the \$3 Duck Stamp will be used for purchase of waterfowl marshes; we hope this continuing program will provide enough habitat to sustain all species.

Congress appropriated \$125,000 this year and authorized the Fish and Wildlife Service to spend up to \$280,000 in later years to try to discover the effects of pesticides on wildlife. But \$24,000,000 were awarded the Department of Agriculture to continue spreading lethal poisons in an attempt to kill fire ants.

To pay Indians who wished to secede from the Klamath Reservation, the Reservation forest lands are to be sold. Tragedy (of losing the forests vitally needed to maintain watershed, of losing the large waterfowl marsh, and of having lumber that should supply us for years suddenly dumped on the market) was narrowly averted. Congress amended the Klamath Termination Act to provide that the purchaser of the forest lands must provide sustained yield management; the marsh is to become a National Wildlife Refuge.

Congress protected Alaskan wildlife by retaining it in federal jurisdiction until the new state can assume responsibility.

Senator Paul H. Douglas is making a desperate last minute fight to save the last $3\frac{1}{2}$ miles of Indiana dunes on Lake Michigan by trying to secure National Park status for these few remaining acres. If they are destroyed, even the present small state park will be greatly injured by surrounding commercial developments. The state park is even now overused, and is too small to show our future generations any natural dune land. Senator Douglas is supplying petitions that people may sign who are interested in saving the duneland.

Congress passed amendments to the Coordination Act that "authorize 'enhancement' so that fish and wildlife agencies for the first time will have a voice in water resource development and management as related to flood control, power, navigation, or reclamation projects."

The Watershed Protection and Flood Prevention Act was amended to permit the federal government to share the cost of improving impoundments in watershed projects for fish and wildlife.

Congress established a National Recreation Resources Review Commission to "inventory present facilities and project recreational needs into the years 1975 and 2000 A.D."

Disappointments

For two years Congress has been considering and revising a bill to recognize Wilderness values in certain Federal lands and make an effort to protect them from future desecration. Field hearings have been requested; they were held during November in Bend, San Francisco, Salt Lake City, and Albuquerque.

Although the Senate passed the bill to establish the Chesapeake and Ohio Canal National Historical Park, Congressman Wayne N. Aspinall (Colo.) killed it. He turned the chairmanship of a special meeting of the House Interior and Insular Affairs Committee over to a temporary chairman and walked out of the room and stayed out until the meeting was adjourned for lack of a quorum.

A bill to protect fish and wildlife by requiring the Secretary of the Interior to approve a dam before the Federal Power Commission could issue a license for construction failed to pass.

The Department of the Interior failed to get a voice in Department of Agriculture drainage projects that affect waterfowl marshes.

Senator Dworshak (Idaho) got \$500,000 appropriated for detailed planning of Bruce's Eddy dam, even though Congress has not approved the site and even though the Idaho Fish and Game Department has completed studies that prove the dire effect of this high dam on trout, salmon, and the largest elk herd in the world.

Dinosaur National Monument failed to achieve its deserved National Park status.

Congressman Blatnik's bill to double sewage treatment grants failed, but at least some federal aid was kept, instead of being completely abolished, as proposed by the President. Even members of the presidentially appointed committee were against letting individual states take all responsibility for the desperately needed pollution abatement program. However, this plan has been slightly revised and is expected to be a threat again. It would return telephone tax revenues to the states, but even if states levy the tax and succeed in overcoming industrial apathy toward waste treatment, the states most in need of funds will receive least.

The July 1, 1958 issue of "Conservation News" points out that certain dams have caused irreparable damage. Years ago Chinook Salmon were cut off from their spawning grounds by Grand Coulee dam. A few sites for dams remain above Grand Coulee (particularly Libby and Paradise). Conservationists favor these in the hope of forestalling construction of
(concluded on page 131)

SPECIES INDEX

MARYLAND BIRDLIFE

VOL. I-13 1945-1957

Volume numbers in Roman numerals, page numbers in Arabic. An "n" before a page number means the page contains nesting information of some sort. "Two," "three," etc., after a page number means there are that many mentions on the page.

Anhinga--XI 30; XIII 82.

Ani--XI 30.

Auk, Razor-billed--V 2.

Avocet--IV 10; VIII 45; XII 27, 57.

Baldpate--II 17, 41; III 2, 3, 4, 6, 11; IV 4 two, 5, 10 two, 16, 28; V 14, 22 two, 26, 37 two, 51, 63, 68; VI 15 two, 22, 39, 45 three; VII 19, 35, 38; VIII 3, 6, 12, 30, 44; IX 6, 15, 29; X 11, 12, 49; XI 13, 19, 23; XII 94; XIII 4, 29, 70, 76, 82.

Becard, Rose-throated--XI 30.

Bittern, American--II 35; V 8, 30; VI 12, 15, 21, 31, 39, 44; VII 35, 38; VIII 6, 12, 16, 30; X 47; XI 23; XII 51; XIII 4, 18, 21, 29, 32, 76.

Bittern, Least--V 30, 63; VII n9; VIII 30, n36; IX 3, 5; X n28, 47; XI n4, 23, 31; XII 51; XIII 4, 18.

Blackbird--I 26.

Blackbird, Brewer's--III 3, 4, 56; IX 3; XII 31, 57, 91; XIII 8.

Blackbird, Redwinged--XIII 82; see Red-wing.

Blackbird, Rusty--II 10 two, 44 two; III 3, 4, 82; IV 7, 13; V 23; VI 27; VII 37; VIII 9, 32; IX 8; X 37, 51; XI 27, 31; XII 53; XIII 8, 31.

Blackbird, Yellow-headed--XII 39-40, 91.

Bluebird--I 2 two, 22; II 1, 2 two, 9, 11, 16, n18, n26-27, 44; III 1, 2 three, 3, 4, 5, 12, 60, 62, 63, 77, 84, 88; IV 7, 11, 13, 15, 21, 31; V 23, n45, n66; VI 19, 27, 44; VII n14, 23, n24, 31, 36; VIII 8, 31, n40; X n7, n33, 46; XI n8, 26, 31; XII 7, n46, 52, n100; XIII 7, n15, 30, 35.

Bobolink--III 54; IV 27; V 38, 68; VII 37; VIII 32; IX 26; X 13; XI 15, 16, 27, 58; XII 29, 53, 54, 89, 90, 103; XIII 8, 28 two, 31, 56, 75, 78.

Bob-white--II 9, 15; III 1, 3, 4, 12, 46; IV 6; V 20, n42; VI 23, 44; VII n10, 35; VIII 7, 16, 29, 30, n36; X n4, n29, 43, 46 two, 47; XI n5, 24; XII n41, n48, 51, 93; XIII 5, n12, 29, 35, 82.

Brant--IV 1, 3, 4, 5, 14, 19; V 25, 56; VI 20, 21, 35, 48, 55; VII 18; VIII 3, 6, 21; IX 13; XII 51, 101; XIII 4, 29, 37, 82.

Buffle-head--III 3, 4, 11; IV 4, 5; V 11, 37, 51; VI 13, 16, 22; VII 19, 39; VIII 6, 21, 44, 45; IX 3, 6; XI 23; XII 33, 51, 55, 102; XIII 4, 29, 32, 38, 57, 82.

Bunting, Indigo--I 15; II 16, n37; III 12, 60, 62, 63, 82; V 32, n47, 63; VI 45; VII n15, 37; VIII 32; n43; IX 26, 30; X n9, 13, 16, n35, 45, 46, 53; XI n10, 15, 27, 58; XII 29, 31, n48, 53, 89, 94; XIII 8, n17, 31, 36, 56, 75.

Bunting, Snow--IV 2, 13, 14; V 25; VI 15, 19, 29; VII 40; VIII 48; IX 10, 32; X 55; XI 27; XII 57; XIII 9, 21, 39.

Cacique, Yellow-billed--XI 30.

Canvas-back--III 6, 11; IV 1, 4, 5, 10, 19; V 22, 25, 26, 37, 51; VI 16, 22, 31, 35, 39, 45 two, 48; VII 19, 35, 38; VIII 6, 30, 44; IX 6; X 11, 48; XI 23; XII 51; XIII 4, 22 two, 29, 82.

Caracara, Audubon's--XI 30.

Cardinal--I 1, 2, 22; II 1, 2 three, 10, 11 two, 16, 18, 33; III 1, 2 two, 3, 4, 5, 12 two, 16, 46, 52, 60 two, 63 two, 77, 88; IV 3, 7, 21, 30 two; V 23, 26, n47; VI 19, 28, 44; VII n15, 23, n24, 31, 37; VIII 4, 9, 11, 32, n42, n43; X n9, n35, 43, n45; XI n10, 27, 28, n29, n51, 63; XII n47, 49, 53, n100; XIII 8, n17, 31, 41.

Cardinal, Brazilian--XI 61.

Catbird--I 22; II 16, 32, n33, n36, 43; III 4, 7, 12, 51, 60, 61, 62, 63, n75, 80, 84, 88; IV 4, 7, 20; V 10, 14, 36, n45, 63, 68; VI 14, 26, 33, 41; VII 7, n13, 20, n23, 30, 36; VIII 8, 14, 31, n40, 46, n48; IX 7, 8, 9, 13, 30; X n6, 13, n32, 37, 53; XI n8, 15, 26, n50, 57, 63; XII 29, 30, n45, 52, 89, 94, n100, 103; XIII 7, n15, 30, 36, 39, 56, 75.

Chachalaca--XI 30.

Chat, Yellow-breasted--II 16, n29, n37; III 12, 46, 60, 62, 63; V 36, n47; VI 51, 58; VII n15, 37; VIII 23, 32, n42, 47; IX 26, 30; X n8, n9, n34, n35, 13, 46 two, 53, 54; XI n9, 15, 27, 58; XII 8, 29, 31, 53, 63, 89, 94, 103; XIII 8, n16, 20, 28, 31, 36, 56, 75.

Chickadee--II 33; IV 21, 30; VII 23.

Chickadee, Black-capped--II 2; IV 6; V n44, 63; VI 19, 20, 26; VIII 8; IX 3; X 52; XI 22, 25, 60; XII 30, n45, 52, 63, 75-85; XIII 7, 30, 36, 78.

Chickadee, Boreal--XIII 82.

Chickadee, Brown-capped--XII 22, 25, 28 two; XIII 82.

Chickadee, Carolina--I 1 two, 2, 7, 22; II 2 two, 9, 11 two, 16; III 1, 2 three, 3, 4, 12, n75; IV 6; V n44; VI 19, 20, 26, 33, 34 two, 44 two; VII 7, n12, 36, 39, 40; VIII 8, 31, n39; X n6, n32, 37, 44, 47; XI n7, 25; XII n45, 52, 80-84, n93; XIII 7, n14, 30.

Chuck-will's-widow--IV 26; V 54; VIII 31; X 14; XI 3, 25, 31, 57, 60, 67; XII 52, 91; XIII 6, 30.

Colonel, Little--VIII 19.

Coot, American--I 2, 3; III 2, 11; IV 6, 16; V 27, 37 two, 54, 57, 68; VI 24, 45 four; VII 19, 35; VIII 3, 7, 13, 21, 29, 30, 45; XI 20, 24, 56; XII 33, 51, 93; XIII 5, 29, 35.

Cormorant, Double-crested--I 21; IV 5, 19; V 50, 54; VI 15, 21, 31, 48; VII 23; VIII 6, 19, 29, 30; IX 5, 28; XI 23; XII 51, 54, 88, 102; XIII 4, 28, 29.

Cormorant, European--VI 31; VII 17; VIII 3, 6; IX 24.

Cowbird--I 1, n13, 22; II 16, 18, 26, 36, n36; III 3, 4, 12, 18, 52, 60, 61, 63; IV 7; V 23, 26, n47, n49; VI 28; VII n15, 37; VIII 9, 23, n41, n42; IX 8; XII n47, 53, 62; XIII 8, n17, 31, 82.

Cowbird, Brown-headed--XII 82.

Crane, Sandhill--XI 30.

Crane, Whooping--XI 30.

Creeper, Brown--III 1, 2 three, 3, 4, 11; IV 6, 29, 32; V 30; VI 19, 26, 34, 41; VII 23, 36; VIII 8, 15; X 51, 54; XI 26; XII 28; XIII 7, 20, 30, 74.

Crossbill, Red--III 18; X 15, 16; XI 22, 27, 61; XII 8, 31, 50, 53, 54, 58, 103; XIII 8.

Crossbill, White-winged--X 15, 16; XI 22, 27, 61; XII 57.

Crow--I 2, 22; II 2 three, 9, 16; n29, 33; III 1, 2 three, 3, 4, 5, 12, 18; IV 4, 16, 13, 32; V 11, 35; VI 19, 26, 34, 44, 59; VII 31, 36; VIII 8, 31, n39; X n6, n32, 44, 46; XI n7, 25; XII n45, 52, 57; XIII 7, n14, 30, 82.

Crow, Common--XIII 82.

Crow, Fish--I 15, 18; III 3, 4; IV 6; V 26; VI 26, 33, 50; VII 36; VIII 8, 24, 31, n35; X n3, n6, 44; XI 21, 25; XII 49, 52, 94; XIII 7, 28, 30, 35.

Cuckoo--II 33.

Cuckoo, Black-billed--II 16; III 50, 60, 63, 79, 88; IV 25, 29; V 63; VII n10, 35; VIII 22, 23, 27, 31; IX 25, 26; X 13; XI n3, n6, 14, 15, 20, 25, 57, 59; XII 27, 52, 55, 89, 94, 103; XIII 6, n10, n13, 19, 30, 32, 36, 56.

Cuckoo, Squirrel--XI 30.

Cuckoo, Yellow-billed--II 16, 44; III 50, 79; IV 25, 29; V 9, 57; VII n10, 35; VIII 22, 23, 27, n37; IX 25, 26, 30, 31; X n4, 13, n30, 43, 46, 47, 53; XI n5, 14, 25, 57, 59; XII 27, 28, 52, 89, 90, 93; XIII 6, n13, 19, 30, 35, 56, 75.

Curlew, Hudsonian--II 35; III 48; V 51; VIII 28, 29, 30; XI 24, 31; XII 57; XIII 5, 9, 29, 82.

Dickcissel--V 53; VI 51; VII 30, 37; VIII 26, n43, 48; X 16, 55; XI 27, 61, 63; XII 91, 103; XIII 8, 39.

Dove, Mourning--I 15, 22; II 2, 9, 15, n29, 33; III 1, 2, 3, 4, 79; IV 4, 6, 10; V 11, 22, n43; VI 14, 25; VII n10, 35; VIII 3, 8, 31, n37; X n3, n4, n30, 46; XI n5, 25, 57; XII 7, n43, 52, 59, 62; XIII 6, n13, 30, n36.

Dove, Rock--II 12, 15; III 56.

Dovekie--V 21, 22 two; VI 19; XII 57.

Dowitcher--III 49, 64; IV 19, 24; V 9, 51 two, 57, 68; VI 13 three, 15 two; VII 35; VIII 3, 7, 22, 29, 30; IX 25, 29; XI 31.

Dowitcher, Eastern--XI 24; XII 51, 102; XIII 5, 30, 76, 77, 82.

Dowitcher, Long-billed--VIII 45; XIII 5, 9.

Dowitcher, Short-billed--XIII 82.

Duck--III 6, 7, 11.

Duck, Black--I 15; II 2, 11; III 1, 3, 4, 11; IV 4, 5, 15; V 8, 11, 14, 26 two, n42, 68; VI 16, 19, 20, 21, 45; VII n9, 19, 35, 38; VIII 6, 29, 30, 44; X n3, n28, n29; XI n4, 23; XII n5, n42, n103; 7, 33, 51, 94; XIII 4, n11, 22, 29, 35, 70.

Duck, Harlequin--VI 19, 22; XI 56; XII 57; XIII 4, 9.

Duck, Ring-necked--I 16; II 9; IV 5, 19, 28; V 9, 11, 26 three, 37, 54, 63; VI 12, 22, 32, 39, 45 two, 48; VII 35, 38, 39; VIII 6, 30, 45; IX 6, 25; X 11, 49; XI 23; XII 51, 55; XIII 4, 22, 35, 38.

Duck, Ruddy--I 2, 3 two, 13; II 2, 3, 4, 11; IV 4 two, 5, 10 two, 19, 22; V 9, 11, 14, 22 two, 26, 51, 63, 68; VI 13, 23, 31, 35, 39, 45; VII 19, 35, 38; VIII 6, 13, 30, 44; IX 6; X 12, 49; XI 23; XII 51, 55;

VIII 4, 22, 29, 36.

Duck, Wood--I 22; II 9, 15, 36; III 2, 4, 46, 78; IV 5, 19; V n42; VI 22, 39; VII n9, n11, 35, 38; VIII 6, 21, 30, n36; X n4, n28, n29; XI n4, 23; XII n42, 51, n94; XIII 4, n11, 29, 35, 76.

Dunlin--XIII 82.

Eagle, Bald--I 18, 20, 21; II 6, 17; III 1, 2 two, 3, 4, 6, 11; IV 6, 10, 12, 19, 32; V 14, 26, 37, 54, 63; VI 6, 9, 10, 16, 23, 45, n59; VII n9, 35, 39; VIII 3, 7, 29, 30, n36; IX 6; X n4, 12, n29, 26, 39, 45, 47; YI 13, 20, 24; XII 33, n42, 51, 104; XIII 5, n10, n12, 29, 38, 76.

Eagle, Golden--I 16, 22; VI 10, 55; VIII 45; IX 6, 29; X 26; XI 24; XII 33, 57; XIII 5, 9, 21, 38.

Egret--IV 31.

Egret, American--I 18; II 35; III 3, 47, 78, 86; IV 4, 5, 12, 19, 23, 28, 32; V 8, 14, 56; VI 12, 15, 21, 38, 48; VII 18, 35; VIII 12, 29, 30; IX 24; X 11, n28, 49; XI n11, 12, 23; XII 51; XIII 4, n11, 18, 57, 76, 82.

Egret, Cattle--IX 16; X first Maryland record 11; XI 31, 55; XII 57; XIII summers for first time 57.

Egret, Common--XIII 82.

Egret, Snowy--II 35; III 47, 78; IV 19, 23 three, 28; V 8, 56, 68; VI 48; VII 18; VIII 29; IX 24, 28; X n28; XI 23, 55; XII 51; XIII 4, n11, 29, 76.

Eider--VI 19, 22.

Eider, American--III 56; V 21, 22, 25, 51, 54; XII 8, 57; XIII 82.

Eider, Common--XIII 82.

Empidonax--XII 28.

Euphonia, Bonaparte's--XI 30.

Falcon, Aplomado--XI 30.

Falcon, Bat--XI 30.

Falcon, Laughing--XI 30.

Falcon, Peregrine--XIII 82.

Finch, Purple--II 2, 10, 11, 12; III 1, 2, 3, 4, 5, 6, 7, 45; IV 2, 4, 7, 13, 30, 31; V 10, n48, 58, 63; VI 28, 42, 51; VII 37, 40; VIII 9, 20, 26, 32, 48; IX 8; X 51; XI 21, 27; XII 8, 28, 31, 33, 49, 50, 53, 64, 90, 93; XIII 8, 28, 36, 39, 74, 78.

Flicker--I 2 two, 22; II 2 two, 19, 16, 31, 35; III 1, 2 two, 3, 4; IV 6, 13; V 11, n43, 66; VI 19, 25, 44; VII n11, 20, 31, 36; VIII 8, 27, 31, n37; X n5, n30, 37, 52; XI n6, 25; XII n44, 52, 62, n100; XIII 6, n13, 30, 82.

Flicker, Yellow-shafted--XIII 82.

Flycatcher, Acadian--III 47, 80; IV 29; VI 60; VII n12, 36; VIII 23, 31; IX 26, 27; X n5, n31, n43, n44; XI n7, 21, 25, 57, 59, 60; XII 29, n44, 52, 89, 94, 103; XIII 6, n14, n17, 30, 36, 56, 67.

Flycatcher, Alder--IV 29; VI 50; VIII n23, n35; X 52; XI n3, n7, 14, n22, 25, 59, 60, 63; XII 28, 50, 91, 94, 103; XIII 6, 36, 82.

Flycatcher, Crested--II 16; III 45, 50, n52, 80; IV 20, 29; V 33, 34 two, n44; VI 40, 57; VII n11, 31, 36; VIII 14, 31, n38, 46; IX 13, 26 two, 30, 31; X n5, 13, n31, 53; XI n6, 15, 25, 57, 59; XII 29, n44, 52, 89, 94; XIII 6, n13, 30, 36, 56, 75, 82.

Flycatcher, Derby--XI 30.

Flycatcher, Great Crested--XIII 82.

Flycatcher, Least--III 12, 14, 60; IV 24; V n44, 63; VII 36;

VIII n23, n38, 29; IX 26 two; X 14; XI 14, 25, 59, 60; XII 29, 50, 52, 91, n93, 94, 103; XIII 6, 30, 32, n35.

Flycatcher, Olive-sided--IV 24, 31; VI 50, 57; X 14, 52; XI 14, 25; XII 29, 50, 52, 55, 91, 103; XIII 6, 77.

Flycatcher, Scissor-tailed--XI 30.

Flycatcher, Traill's--XIII 81, 82.

Flycatcher, Yellow-bellied--X 52; XI 14, 25, 63; XII 28, 50, 91, 94, 103; XIII 6.

Gadwall--IV 4, 5, 12; V 8, 14, 25, 54; VI 12, 15, 22, 31, 39 two, 45, 48; VII 19, 23; VIII 3, 6, 12, 21, 28, 30, 44; X 11, n49; XI 23, 55; XII 33, n41, n42, 51, 55, n86, 104; XIII 4, n11, 22, 29, 32.

Gallinule--V 30.

Gallinule, Common--XIII 82 two.

Gallinule, Florida--II 3; V 54, 57; VII 35; VIII 21, 20, 30; IX 29; X 50; XI 13, 24; XII 8, 50; XIII 5, 19, 82 two.

Gallinule, Purple--III 71; X 50.

Gander, Pocomoke--VIII 19.

Gannet--II 27; III 3, 4; IV 19; V 25, 50; VI 12, 15, 19, 20, 21, 48; VII 18, 23; VIII 6, 28, 30, 44; XI 12, 23; XII 50, 51, 55, 57; XIII 4, 9, 29, 55.

Gnatcatcher, Blue-gray--III 46, 64; V n45, n54, 31, 63; IV 27, 29; VI 41, 57, 58; VII n14, 18, 20, 36; VIII 14, 20, 24, 27, 31, n41, 46; IX 8, 30; X n7, 13, n33, 45, 53, 54; XI n8, n10, 15, 16, 26, 57; XII n46, 52, 89, 93; XIII 7, n15, 28, 30, 35, 56.

Godwit, Hudsonian--III 71; IV 24, 28; VI 49, 56.

Godwit, Marbled--III 56, 71; IV 24, 28; V 51; VI 49 two, 56; VII 30, 35; VIII 45; XI 24; XII 57.

Golden-eye, American--III 3, 4, 11; IV 5, 15; V 11, 22, 26 two, 37, 54; VI 13, 16, 22, 45, 48; VII 39; VIII 6, 21, 28, 30, 44, 45; IX 3, 6, 15, 25; X 11, 16; XI 23; XII 50, 51; XIII 4, 22, 29, 57, 82 two.

Goldeneye, Common--XII 32.

Goldfinch--I 22; II 2 two, 10, 16, 33; III 1, 2 two, 3 two, 4, 5, 6, 12, 14, 60, 61, 62, 63, 82, 88 two; IV 4, 7, 30; V 32, 36, n48; VI 19, 28, 34, 44, 45; VII n16, 30, 31, 37; VIII 9, 20, 27 two, 32, n43, 44, 46; IX 10; X n3, n10, n35; XI 3, 27, 28, 58.

Goldfinch, American--XIII 82.

Goldfinch, Eastern--XII 8, n48, 53, 54, 94, n100; XIII 8, n10, n17, 28 three, 31, 82.

Goosander--XIII 82.

Goose--IX 15.

Goose, Blue--V 8, 50, 56, 63; VI 12, 15, 21, 32, 35, 39, 55; VII 19, 23; VIII 6, 21, 45; IX 6, 16, 28; XI 23, 31; XII 26 two; XIII 4, 21 three, 37, 57.

Goose, Canada--I 3; III 3, 4, 6, 7, 11, 78; IV 3, 4, 5, 10, 14, 19; V 8, 11, 26, 30, 56; VI 15 two, 16, 21, 32, 35, 39, 55 two; VII 18, 23, 35; VIII 3, 6, 13, 21, 30, 44; IX 6, 28; XI 19, 23, 55, 57; XII 7, 25, 28, 33 two, 51, 52, 102; XIII 4, 18 two, 21 three, 29, 36, 74, 76.

Goose, Hutchins'--VI 55.

Goose, Snow--IV 19; VI 12, 21, 35, 39, 55; VII 18; VIII 3; IX 6, 29; XI 23, 55; XII 26; XIII 4, 21 three, 29, 32, 57 two.

Goose, White-fronted--VI 19; XIII 4, 9, 18.

Goshawk--IV 4, 5; VI 19; XI 22, 23, 56; XII 57.

Grackle--I 26; III 82; IV 4, 7; V 10 two, 11, 23.

Grackle, Boat-tailed--III 72; IV 25; V 23, n41; VI 19, 27; VII 23; VIII 9, 27, 32, 47; X n3, n9; XI 27; XII 53, 58; XIII 8, 31.

Grackle, Bronzed--III 4, 7.

Grackle, Common--XIII 81, 82.

Grackle, Purple--I 14, 22; II 10, 16, 32, 33, n37; III 3, 4, 7, 53; V 38, n47; VI 28, 44 two; VII n3-7, 37; VIII 9, 32, n42; IX 8; X n9, 15, n35, 47; XI n10, 27; XII 8, n42, n47, n65, 86, 53, 93, n100; XIII 8, n16, 23, 31, 82.

Grebe--VIII 3.

Grebe, Holboell's--IV 18; V 8; VI 20, 21, 38; VIII 6; XI 23; XII 7, 57; XIII 4, 9, 82.

Grebe, Horned--II 18; III 2 two, 3, 4, 11, 45; IV 4, 5, 21; V 11, 14, 25, 26, 63; VI 16, 21, 38, 48; VII 35; VIII 6, 12, 21, 44; IX 5; XI 12, 23, 55; XII 25, 51, 62, 94; XIII 4, 22, 29, 35, 55.

Grebe, Pied-billed--II 35, 44; III 1, 3, 4; IV 5, 28, 31; V 8, 11, 14, 21, 63, 68; VI 21, 31, 48; VII 35; VIII 6, 12, 30, n36, 44; IX 5, 28; XI n3, n4, 12, 23; XII 51, 62, 93; XIII 4, n10, n11, 22, 29, 36.

Grebe, Red-necked--XIII 82.

Grosbeak, Blue--III 46, 82; IV 26, 30; V 53; VI 42, 58; VII 30; VIII 26; IX 3; X n3, n9, 55; XI n3, n10, 21, 27; XII n48, 53, 55; XIII 8, n17, 31.

Grosbeak, Evening--I 24; II 10, 11; III 6, 83; V 32, 38; VI 15, 19, 28, 33, 42; VII 20, 40; VIII 4, 9, 47; IX 4, 10, 14, 19-23, 32; X 15, 16; XI 22, 27, 31, 61; XII 8, 25, 28, 31, 33, 53, 58, 62, 64, 90; XIII 3, 8, 39, 78.

Grosbeak, Pine--VIII 47; IX 4, 10; X 15; XI 22, 27, 61; XII 64; XIII 8.

Grosbeak, Rose-breasted--II 3, 16, 36; V 19; VI 42, 51; VII 37; VIII 32, n43; IX 26, 30; X 13, 51, 53, 55; XI 27, 58; XII 28, 29, 53, 89, 90, 91, 94; XIII 8, 31, 36, 47, 56, 74, 75, 78.

Grouse, Ruffed--VI 19, 20, 23, 44; VII n10; VIII 7, n36; X n4, 12; XI n5, 24; XII 33, 51, 55, 88; XIII 5, n10, n12, 29.

Gull--II 35.

Gull, Bonaparte's--III 3; IV 6, 20; V 11, 22, 30; VI 25; VII 23, 33; VIII 7, 13; XI 24, 31; XII 26, 52; XIII 6, 30.

Gull, Glaucous--V 21, 22 two; XII 88.

Gull, Great Black-backed--II 35; III 4, 79; IV 6, 14, 28; V 22, 25, 51, 63; VI 13, 24, 32, 35, 40, 49; VII 19, 39; VIII 7, 13, 22, 27, 31; IX 29; X 13, 24, 56; XII 52, 88; XIII 5, 30, 77.

Gull, Herring--I 2, 14; II 1, 2 two; III 2 two, 3, 4, 11, 50; IV 6; V 11, 14, 22; VI 24; VII 35; VIII 7, 22, 31; IX 25; X 45, 50; XI 24; XII first Maryland nesting record 4, 5; n41, 42, 52, n103, 104; XIII 5, n12, 22, 30, n77.

Gull, Iceland--VI 49; XII 88; XIII 5, 9.

Gull, Laughing--I 14, 17, 18; III 3, 4, 79; IV 20; V 9; VI 25, 56; VII 19-20, 35, 39; VIII 31, n37, 45; IX 25; X n29, 43, 45; XI n5, 24; XII n3, n27, n43, 52; XIII 6, n12, 19, 30, n57, 77.

Gull, Ring-billed--II 1; III 2 two, 3, 4, 11, 50; IV 6; V 11, 14; VI 24, 49; VII 35; VIII 7, 22, 31, 46; IX 25; X 45; XI 24; XII 9, 52, 104; XIII 6, 22, 30.

Hawk--III 18; migration VI 2-11; migration X 19-26.

Hawk, American Rough-legged--III 4; VIII 82; see also Rough-legged Hawk.

Hawk, Blackish Crane--XI 30.

Hawk, Broad-winged--II 15; III 3; V 63, 68; VI 2-11, 55; VII 35; VIII 30, n35; IX 6, 16; X n3, n4, 12, 19, 21, 25, 26, n29, 50; XI 13, 29, 23, 31, 57; XII 26, 51, 89, 94, 102; XIII 5, 29, 36, 56, 57, 76.

Hawk, Cooper's--I 22; II 15, n17; III 1, 2, 3, 4, 16, 85, 88; IV 5, 12; V 63; VI 6, 10, 23, 59; VII 35; VIII 7, 30; IX 6; X 12, 26, 46; XI 3, 13, 23; XII 33, 51; XIII 5, 29, 36, n67.

Hawk, Duck--II 35; III 4, 79; IV 6; V 37, 63, 66; VI 6, 10, 48, 56; VII 39; VIII 7, 13, 21; IX 6; X 12, 26; XI 24, 56; XII 50; XIII 5, 29, 32, 57, 76, 82.

Hawk, Marsh--II 35; III 1, 2 two, 3, 4, 11, 85; IV 6, 12; V 26, 37; VI 6, 10, 23, 48; VII n9, 35; VIII 7, 21, 29, 30; IX 6; X 26; XI n5, 24, 30; XII 33, 51, 93; XIII 5, 29, 50.

Hawk, Mexican Gray--XI 30.

Hawk, Mexican Roadside--XI 30.

Hawk, Pigeon--I 16; II 35; III 4; IV 1, 4, 6; V 21, 22 two, 37, 63; VI 6, 10, 23; VII 35; X 26; XI 13, 20, 24, 56; XII 51, 62; XIII 5, 29, 32.

Hawk, Red-shouldered--II 2, 9; III 1, 2 two, 3, 4, 11, 16, 84; IV 5, 19, 32; V 26, 37, n42; VI 6, 23, n58; VII n9, 35, 39; VIII 3, 7, 13, 30; IX 6; X n4, 19, 21-26, n29, 47, 49; XI n5, 13, 23; XII 33, n42, 51, 94; XIII 5, n11, 29, 35.

Hawk, Red-tailed--I 22; II 2 two, 15, 35; III 1, 2 two, 4, 5, 84, 85, 88; IV 5, 12, 32; V 26, 37, 63; VI 6, 10, 11, 19, 23, 34; VII 35, 39; VIII 7, 30, n36; IX 6; X 19, 23, 25, 26, n29, 46, 49; XI 13, 23; XII 33, 34, 51, 93; XIII 5, 22, 29, 35.

Hawk, Rough-legged--IV 4, 6, 12, 19; V 9, 14, 26; VI 6, 10, 23, 32; VIII 7; IX 6; X 12, 26; XI 24; XII 62, XIII 5, 82; see also American Rough-legged Hawk.

Hawk, Sharp-shinned--I 22; II 2 two, 15, 35; III 1, 2 two, 3, 4, 5, 16, 85; IV 5, 12, 32; V 63, 68; VI 6, 7, 10, 11, 23; VII 23, 35; VIII 7, 13, 19, 21, 30; X 12, 21-26; XI 3, 23, 30; XII 33, 51, 94; XIII 5, 29, 35.

Hawk, Short-tailed--XI 30.

Hawk, Sparrow--II 15, 29; III 2 three, 3, 4, 7, 11, 16; IV 6; V 11, 26, 37, n42; VI 6, 10, 19, 23; VII n10, 35; VIII 7, 13, 19, 21, 30; X n4, 12, 21-26, n29; XI 3, 24; XII n42, 93; XIII 5, 22 two, 29, 36, 76 two.

Hawk, Zone-tailed--XI 30.

Heron--XII 25, 39.

Heron, Black-crowned Night--II 15, 35; III 12, 58; IV 5; V 14, 38, 54, 68; VII 34; VIII 16, 30, n36; IX 5; X n28, 47; XI 19, 23; XII 51; XIII 4, n11, 29.

Heron, Chestnut-bellied--XI 30.

Heron, Great Blue--I 2, 14, 15 two; II 2, 9, 11, 15; III 2, 3, 4, n22; IV 5; V n42; VI 20, 21; VII n9, 35, 38; VIII 6, 30; IX 28; X 11, n28, 47; XI n11, 23; XII 51, 94, 104; XIII 4, n10, n11, 18, 22, 29, 35.

Heron, Green--I 15; II 15; III 1, 78; IV 19, 25; V 8; VI 12, 38; VII 35; VIII 12, 16, 19, 30, n35; IX 5, 28; X n3, 11, 47 three; XI 12, 23; XII n42, 51, 89, 94, n103; XIII 4, n11, 29, 36, 37, 56.

- Heron, Little Blue--III 48; IV 19, 23 two, 28; V 21 two, 56, 68; VI 38, 48; VIII 44; IX 24; X n28, 44; XI n4, 23; XII 51, 55; XIII 4, n11, 18, 57 two.
- Heron, Louisiana--II 35; III 48; IV 23; V 56; X n28; XI 23; XIII 4, n11, 57, 76.
- Heron, Yellow-crowned Night--III 48, 78; V 63; VIII 44; IX 3; X 11, n28; XI 23; XII 51, 57; XIII 4, 29, 55.
- Hummingbird, Ruby-throated--II 43 two; III 45, 50, 80; V n43, 63; VI 56; VII n11, 36; VIII 23, 31, n37; IX 26, 30; X n5, 13, 14, n30, 36, 45, 46, 53; XI n6, 14, 15, 25, 57, 60; XII n32, n43, 52, 89, 90, 94; XIII 6, n10, n13, 30, 36, 53, 54, 56, 75.
- Hummingbird, Rufous--X 36.
- Ibis, Eastern--XIII 82.
- Ibis, Glossy--X 11; XI 30; XII 25, 57, 88; XIII 4, 9, n10, n11, n57, 82.
- Ibis, Wood--XI 55; XII 25, 58; XIII 4, 9.
- Jacana--XI 30.
- Jaeger, Parasitic--V 68; XII 57.
- Jaeger, Pomarine--V 68; VI 56.
- Jay, Blue--I 2, 22; II 2 two, 4, 16, 28, 33, n36, 44 two; III 1, 2 three, 3, 4, 5, 22, 45, 46, 58, 85; IV 4, 6, 30; V 20, 34, n44; VI 19, 25; VII n12, 23, 30, 36, 39; VIII 4, 8, 20, 24, 31, n39; IX 7; X n6, n32, 52; XI 3, n7, 25, 28, 60; XII 7, 8, 29-30, n45, 52, 94, n100; XIII 6, n14, 20, 30.
- Jay, Green--XI 30.
- Junco--I 2, 22; II 2 two, 10, 11, 16, 44; III 2 two; see also Slate-colored Junco.
- Junco, Oregon--XII 31, 57.
- Junco, Slate-colored--I 24; II 2; III 1, 3 two, 4, 5 two, 12, 22; IV 3, 4, 7, 21, 30; V 26, n48, 58, 63, 66; VI 19, 28, 34 two, 44 two, 58; VII 7, 23, 37; VIII 9, 26, 32; IX 27, 32; X 51; XI 27; XII 7, 8, 28, 31, 53, 90, 91, 94; XIII 9, 28, 31, 58, 74.
- Killdeer--I n12, 20; II 9, 15, 35; III 2 three, 3, 4, 11, n46, 92; IV 6, 11; V 11, n42; VI 16, 24, 32; VII n10, n13, 31, 35, 39; VIII 7, 30, n36; IX 6; XI 57, 65, 24, n5; X n4, 12, n29; XII n42, 51, 62, 93, n100; XIII 5, n12, 19, 29, 35, 38.
- Kingbird--II 16, 43; III 12, 41; IV 20; V n44; VI 40, 50, 57.
- Kingbird, Arkansas--III 4; XI 25, 28; XII 59, 103; XIII 6, 77, 82.
- Kingbird, Eastern--III 4, 50, 80; VII n11, 36; VIII 14, 31, n38, 46; IX 26 two, 30; X n5, 13, n31, 44, n46, 53; XI n3, n6, 15, 25, 57, 59, 60; XII n6, 27, 29, n44, 52, 89, 90, 94, n100; XIII 6, n13, 30, 36, 56, 75.
- Kingbird, Western--XIII 82.
- Kingfisher, Amazon--XI 30.
- Kingfisher, Belted--I 2; II 9, 16; III 2, 3, 4, 5, 46, 85, 88 two; IV 6; V n43; VI 20, 25, 44, 45; VII n11, 36; VIII 8, 31; X n5, n30; XI n6, 25, 31; XII 52, 59, 93, 104; XIII 6, n10, n13, 30, 36.
- Kingfisher, Ringed--XI 30.
- Kinglet--IV 32; V 30.
- Kinglet, Golden-crowned--I 16, 22; II 2 two, 18; III 1, 2 three, 3, 4, 5, 11; IV 4, 7; V n41 two, 58, 63; VI 19, 27, 38, 41, 57 two; VII 29, 36, 38; VIII 9, 29; IX 13, 32; X 51; XI 26; XII 28, 50; XIII 7, 22, 74.

Kinglet, Ruby-crowned--I 16, 22; II 2, 10; III 1, 2 two, 3, 4, 7, 12, 16, 88; IV 4, 7, 21; V 21, 23 two, 33; VI 12, 27, 33, 38, 41, 50, 57; VII 36, 38; VIII 9, 16, 20, 31; IX 8; X 13, 51; XI 26, 31, 57; XII 28, 30, 52, 89, 90, 94; XIII 7, 30, 39, 74..

Kite, White-tailed--XI 30.

Kittiwake--VIII first Maryland specimen 16; XIII 6, 9, 19.

Kittiwake, Atlantic--XIII 82.

Kittiwake, Black-legged--XIII 82.

Knot--II 35; III 64; V 57; VI 19, 49, 56; VIII 21, 22; IX 29; XI 24; XII 51, 57, 102; XIII 5, 82.

Knot, American--XIII 82.

Lark, Horned--III 18; IV 4, 6, 14, 25, 27, 32; V 26, n44; VI 25, 30; VII n12, 36; VIII 8, 31, n38; X n5, n31; XI n7, 25; XII n41, 52; XIII 6, 30.

Lark, Northern Horned--III 4; IV 1; V 25; XI 31.

Lark, Prairie Horned--III 3, 4; V 25; XI 21, 31.

Little Colonel---VIII 19.

Longspur, Lapland--III 57; IV 13.

Loon, Common--I 18; III 3, 4, 85; IV 5; V 11, 39, 63; VI 15, 21, 38, 48, 55, 59, 60; VII 35; VIII 6, 21, 30, 44; IX 24, 28; X 49; XI 19, 23, 55; XII 51; XIII 4, 29, 76.

Loon, Red-throated--III 3, 4; IV 5; V 21, 25; VI 15, 20, 21, 35; VIII 6, 21, 29, 30; IX 28; XI 23; XII 51, 58; XIII 4, 29.

Magpie---III 83; VII 24; VIII 3, 8.

Mallard--II 2 two, 9, 11; III 1, 2, 4, 11 two; IV 5; V 4, 26 two, n42, 50, 51, 68; VI 16, 21, 44, 45; VII n9, 18, 35, 38; VIII 6, 30, n36; X n3, n28, n49, 47; XI n4, 23; XII 33, n42, 51, 94, 104; XIII 4, n11, 22, 29, 36, 70, 81.

Martin, Purple--I 14; II 9, 36; III 45, 51, 66, 80; V 11, 31, n44, 63; VI 41; VII n12, 36; VIII 14, 27, 31, n39; IX 7, 8, 16, 26, 30; X n6, 13, n32, 46 two, 53; XI n7, 15, 25, 57, 59; XII n5, 29, n45, 52, 62; XIII 6, n14, 30, 36, 39, 56.

Martin, Sandy--VIII 19.

Meadowlark--II 2, 10, 16; III 3 two, 4, 12, 85; IV 7, 10; V 25; VI 19, 27, 44; VII 37; VIII 4, 9, 32, n35; IX 15; X n3, n8; XI n9, 27; XII 7, n47, 53, 94; XIII 8, n16, 31, 39.

Merganser--V 26 three.

Merganser, American--I 2; II 1, 2, 11, 15; III 2 two, 3, 4, 11 two; IV 5; V 37, 51; VI 20, 23, 45 two; VII 35, 38; VIII 7, 30, 44; X 49; XI 20, 23, 56; XII 51, 55, 93; XIII 4, 38, 82 two.

Merganser, Common--XIII 82 two.

Merganser, Hooded--III 2, 4, 7; IV 5; V 51, 63; VI 15 two, 16, 23, 45; VII 23, 35; VIII 7, 29; XI 23; XII 51; XIII 4, 29, 32, 38.

Merganser, Red-breasted--III 4; IV 5; V 37; VI 23; VII 35; VIII 7, 30, 44; XI 23; XII 51; XIII 4, 29, 35 two, 38.

Mocker, Sandy--VIII 19.

Mockingbird--I 22; II 2, 9, 11 two, 12, 16, n29, 32, 33, 34, n36, 44; III 1, 2 two, 3, 4, 7, 51, 84, 85; IV 7, 12; V 20, n45; VI 19, 26, 44; VII n13, 31, 36; VIII 8, 11, 19, 31, n40; X n6, n32, 37, n40, 46; XI n8, 26, n51, 61; XII 8, n45, 52, n100; XIII 7, n15, 30.

Moorhen--XIII 82.

Motmot, Blue-crowned--XI 30.

Murre, Brännich's--XIII 82.

Murre, Thick-billed--XIII 82.

Nighthawk--II 16, 43, 44; III 46, 50, 79; IV 29; VI 56; VII 36; VIII 31, n35, n46; IX 25, 26, 30; XI 3, 15, 25, 57; XII 27, n41, n43, 52, 89, 94; XIII 6, 30, 53, 56, 75.

Nighthawk, Common--XIII 82.

Nighthawk, Eastern--XIII 82.

Nightingale--VIII 19.

Nuthatch--VII 23.

Nuthatch, Brown-headed--IV 4, 6, 14; VI 15, 26, 35; VII 36; VIII 8, 29, n39; X n32; XI n7, 25; XII 7, 52, 103; XIII 7, 30.

Nuthatch, Pigmy--XIII 82.

Nuthatch, Red-breasted--I 22; III 1, 2 three, 3, 4, 11, 12, 45, 80; IV 4, 6; V 23, 25, 52, 58, 66; VI 26, 50, 57; VII 36, 38, 39; VIII 8, 24; IX 7, 26, 31; X 51, 52 two; XI 21, 22, 25; XII 28, 30, 52, 58, 90, 103; XIII 7, 74, 77.

Nuthatch, White-breasted--I 22; II 1, 2 three, 9, 11, 16, 33; III 1, 2, 3, 4, 5, 77; IV 4 two, 6, 30; V 33, 34, n45; VI 26, 34, 44 two; VII n12, 30, 36, 39, 40; VIII 8, 31; IX 31; X n32, 52; XI 3, 25; XII n45, 52, 58, 93; XIII 7, n15, 30, n35, 74.

Old-squaw--II 17; III 3, 4; IV 4, 5; V 11; VI 22, 31, 48 two; VII 19, 23; VIII 6, 28, 30, 44, 45; IX 6, 15; X 12; XI 20, 23; XII 7, 51, 55; XIII 4, 18, 29, 32, 38, 57 two, 82.

Oriole--IV 27; VI 58.

Oriole, Baltimore--II 15, 16, 33; III 12, 47, 52, 60, 62, 63, 82; IV 11, 24; V 34, 39, n47, 63; VI 15; VII n15, n24, 37; VIII 10, 15, 19, 23, 32, n42, 47; IX 5, 8, 10, 30; X n9, 15, n35, 53; XI n10, 15, 27, 49-50, 58, 65; XII n6, n41, n47, 53, 63-64, 89, 94, 99, n100; XIII 8, 16, 20, 31, 36, 39, 56, 75.

Oriole, Bullock's--XI 49-50.

Oriole, Orchard--II 16; III 12, 47, 52, 60, 61 two, 62, 63; IV 29; V 39, n47; VII n15, 37; VIII 23, 32, n42; IX 5, 10, 26, 30; X n9, 13, n35; XI n10, 15, 27, 58; XII n47, 53, 89, 93, n100; XIII 8, n10, n16, 31, 35, 56.

Osprey--I 3, 4, 14, n17, 20, 24; II 9, 15, n27; IV 4, 6, 19; V 37, n42; VI 6, 9, 10, 19; VII n9, 19, 35, 39; VIII 3, 7, 16, 30, n36; IX 6, 29; X n4, 12, 26, n29, 39, 45, 49; XI n5, 24, 30, 57; XII n42, 49, 51, n65, 93; XIII 5, n12, 29, 36, 38, 57, 76.

Ovenbird--I n7; II 16, 44; III 46, 81; V 32, n47; VI 14, 50; VII n15, 31, 37; VIII 14, 20, 32, n41; IX 7, 8, 27, 30; X n8, 13, n34, 53, 54; XI n9, 15, 26, 58, 59; XII 29, 30, n47, 53, 89, 94; XIII 8, n16, 28, 31, 36, 56, 67, 75, 82.

Owl--III 18.

Owl, Barn--II 42; IV 6, 20; V 38, n43; VI 25, 35; VII n10, 35; VIII 8, n37; IX 7; X n30; XI n6, 25; XII n43, n66, 52; XIII 6, n13, 21, 30.

Owl, Barred--II 9, 16, 17; III 1, 3, 4, 46 two, 64; IV 6, 20, 27; V n43, 66; VI 25; VII n10, n16, 36; VIII 8, 31, n37; XI n6, 25; XII 52, XIII 6, 30, 35 two, 36.

Owl, Ferruginous Pygmy--XI 30.

Owl, Great Horned--I n23; II 16, n18; III 4; IV 6; V n43; VI 25; VIII 8, 28, 31; X n3, n4, n30, 45; XI n6, 25; XII 7, n9, n43, 52; XIII 6, n10, n13, 30, 82.

- Owl, Long-eared--II n18; IV 4, 6; VI 19; IX 7; XII 8, 50; XIII 6, 9.
Owl, Pygmy--XIII 82.
Owl, Saw-whet--V n41; VI 19, 25; VIII n37, 46; IX 13, X 14, 52; XI 14, 22, 25; XII 50, 58, 63; XIII 6, 19, 77.
Owl, Screech--II 16, 33; III 4; IV 6; V n43; VI 25; VII n10, 24, 35; VIII 8; XI 25; XII n43, 52; XIII 6, 30.
Owl, Short-eared--IV 20; V 57; VI 25, 32; X 52; XI 14, 25; XII 52, 55, n91; XIII 6, 22, 30, 32.
Owl, Snowy--II 10, 28; VI 13-14, 32, 40; XI 14, 22, 25, 28.
Oystercatcher, American--V 51; VIII n21, n36; X n4; XI 24, 67; XII 57; XIII 5, 9, 29, 40, 82.
Paroquet, Green--XI 30.
Parrot, Red-crowned--XI 30.
Partridge, Bearded Wood--XI 30.
Pauraque--XI 30.
Pelican, Brown--XII 102; XIII 4, 9.
Pelican, White--XIII 70.
Petrel, Leach's--XI 23, 28.
Petrel, Wilson's--XIII 57.
Pewee, Wood--II 16, n29, n36; II 12, 61, n75, 80, 84; V n44, 66; VI 57; VII n12, 36; VIII 23, 31, n38; IX 26, 30; X n5, 13, 14, n31, 43, 44, 53; XI n7, 14, 15, 25, 57, 59; XII 29, n44, 52, 89, 90; XIII 6, n14, 30, 36, 56, 75.
Phalarope, Northern--III 73; IV 24; VI 49 two, 56; VIII 21; XI 24, 28, 56; XIII 57.
Phalarope, Red--IV 24; VI 49 two.
Phalarope, Wilson's--V 51; XIII 57.
Pheasant, Ring-necked--V 54; VI 19, 23, 56; VIII 3, 7, 21, 28, 30, n35; IX 24; XII 51, 94; XIII 5, n10 two, 12, 29, 36, 38.
Phoebe--I 3; II 2, 9, n18; III 2 two, 4, 12, 51, 61, 80, 84, 88; IV 1, 4, 6, 13, 14, 20, 31; V 9, 22, 34, n44; VI 14, 25, 32, 40, 44; VII n12, 18, 20, 23, 31, 36, 38, 39; VIII 3, 8, 31, n38, 46; IX 8; X n5, n9, 13, 14, n31, n35, 46; XI n6, 15, 25, 57, 59, 60; XII 8, 25, 29, n44, n72, n93, n94, n100, 52, 61, 62; XIII 6, n14, 19, 30, 38, 51.
Phoebe, Black--XI 30.
Pigeon, Passenger--VII last Maryland flight 27, 56.
Pintail--III 2, 3, 4, 11; IV 5; V 26; VI 22, 39; VII 33, 38; VIII 3, 6, 45; IX 25; XI 23, 56; XII 33; XIII 4, 22, 76 two, 81.
Pipit--V 10, 14, 31; VI 27.
Pipit, American--III 4; IV 7; VI 27; VII 20, 46; VIII 3, 6, 45; IX 25; XI 23, 56; XII 30, 52, 62; XIII 7, 30, 82.
Pipit, Sprague's--IV 21.
Pipit, Water--XIII 82.
Plover, Black-bellied--II 35; III 48; IV 12, 24; V 9, 22; VI 13, 24; VIII 7, 21, 30, 45; XI 24; XII 51, 58; XIII 5, 19, 29.
Plover, Golden--V 30; VII 45; X 50; XI 24, 63, 67; XII 26, 88; XIII 5, 19, 72, 76.
Plover, Piping--IV 23, 25, 26; V n42; VII 19, 23; VIII 13, 29, 45; X 50; XI 24; XII 51, 57; XIII 5, 9, 29, 57.
Plover, Semipalmated--II 35; III 48, 79; IV 1, 19; V 51, 57 two; VI 13, 49; VII 35; VIII 21, 30; IX 25; X 46; XI 24, 52; XII 51, XIII 5, 19, 29, 76.

- Plover, Upland--III 53-54; IV 27 two; V 49; VI 39; VII 35; VIII n36; IX 6, 16, 25; X n29; XI 20, 24; XII 51, 55; XIII 5, 57.
- Plover, Wilson's--III 56, 64; IV 24; V 30, 54; XI 3; XII 57, 58.
- Pocomoke Gander--VIII 19.
- Rail--VII 25.
- Rail, Black--X n27, n29; XI 13, 24, 31; XII 57.
- Rail, Clapper--II 35; V 9, 25; VI 19, 24, 35; VII n10; VIII 29, 30, n36, 45; XI 13, 24, 56; XII 42, 51, 58; XIII 5, 29, 57, 76 two.
- Rail, King--III 3; IV 12; V n42, 54b; VI 19, 24, 60; VII n10, 35; VIII 3, 7, 29, 30; X n4; XI 24, 31; XII 42, 50, 51; XIII 5, 29, 32.
- Rail, Virginia--V 9, 25, 63, 68; VI 15, 24; VII n10, 35; VIII 3, 7, 29, 30; X n29, 47; XI n5, 24, 31; XII 42, 51; XIII 5, n10, n12, 29, 32.
- Rail, Yellow--XII 57.
- Raven--V 23, 31, 39, 58; VI 14, 41, 57; VIII 15, 46; X 14; XI 25; XII 33, 50, 57; XIII 7, 82.
- Raven, Common--XIII 82.
- Redhead--II 2, 17; III 2, 6, 11; IV 5, 19 two, 22; V 11, 22 two, 26, 37 two, 51; VI 12, 22, 31, 35, 39, 45 two; VII 19, 33, 38; VIII 6, 13, 21 two, 28, 30, 44; IX 6, 25; X 11; XI 23; XIII 4, 29, 32, 57.
- Redpoll--III 5, 18.
- Redpoll, Common--X 15.
- Redpoll, Hoary--V 21, 25.
- Redstart--II 16; III 14, 51, 60, 63, 64, 82; V 32, n47, 58, 66; VI 42, 51, 57, 58; VII n15, 19, 20, n23, 37; VIII 14, 20 two, 25, 32, n42, 47; IX 7, 8, 27, 30; X n8, n35, 44, 53, 54; XI n9, 15, 27, 58, 63; XII 28, 29, 30, n47, 53, 87, 89, 90, 94, 103; XIII 8, n16, 28, 31, 33, 36, 47, 56, 71, 74, 75.
- Redstart, Painted--XI 30.
- Red-wing--I 2, 15, 22; II 2 two, 10 two, 36; III 2, 3 two, 4, 12, 52, 60, 61, 62, 63, 82, 85; IV 4 two, 7, 10; V 10 two, 23, 26, 36, n47, VI 27, 44; VII n15, 31, 37; VIII 9, 29, 32, n42; X n8, n35, n47; XI n10, 27, 58; XII 8, 40, 41 two, n47, 53, 54, 59, n100, n103; XIII 8, n16, n17, 28 two, 31, 82.
- Robin--I 1, 2 two, n12, 22; II 1, 2, 9, 11, 16, n18, 27, n29, 31-32, n33-34, 37, 43; III 1, 2 two, 3, 4, 12, 51, 60, 61, 62, 63, n74-75, 77, 88; IV 2, 4, 7, 10, 13, 17, 20, 21, 30; V 19, 21, 23, 34, n45; VI 12, 27, 33, 44 two; VII n13, 23, n24, 31, 36, 40; VIII 8, 31, n40; IX 4, 8, 9; X n7, 14, n33, 37, 47; XI n8, 26, 31, n53 two, 57, 65; XII n6, 8 two, n45, 52, 57, 63, n100; XIII 7, n15, 30, 39, 51, 81.
- Robin, Baltimore--VIII 19.
- Ruff--IV 24.
- Sanderling--II 35; III 4, 49; IV 4, 6, 14; V 9, 22, 54, 57 two; VI 24, 32, 49; VIII 7; X 48; XI 24; XII 52, 58, 102; XIII 5, 19, 30.
- Sandpiper--I 15; VIII 21.
- Sandpiper, Baird's--IV 24.
- Sandpiper, Buff-breasted--XIII 72.
- Sandpiper, Least--II 35; III 49, 79; V 9, 57; VI 24; VII 35; VIII 7, 13, 22, 30; IX 6, 25; X 50; XI 22, 24, 63; XII 8, 51; XIII 5, 29, 76.
- Sandpiper, Pectoral--III 49; IV 24; V 51, 57; VI 13; VIII 13, 22, 45; IX 6, 25, 29; X 50; XI 13, 24, 31; XIII 5, 29, 32, 76, 77.
- Sandpiper, Purple--III 64; IV 24; V 9, 63; VI 15, 20, 24, 49;

VIII 7, 22, 27, 30; XI 24, 67; XII 51, 57; XIII 5, 9, 29, 38.

Sandpiper, Red-backed--III 4, 49, 64; IV 12, 14, 26; V 9, 22, 51 three; VI 24, 32, 56; VIII 7, 29, 30, 45; IX 29; XI 24; XII 7, 51; XIII 5, 19, 30, 57, 82.

Sandpiper, Semipalmated--II 35; III 49 three, 79; V 54, 57 two; VI 19, 24, 49; VII 35; VIII 7, 22, 29, 30, 45; XI 22, 24, 63; XII 52; XIII 5, 30, 76.

Sandpiper, Solitary--III 48, 79; IV 24; V 20; VII 35; VIII 13, 22, 30; IX 6; XI 20, 22, 24, 57; XII 51, 89, 94; XIII 5, 30, 76.

Sandpiper, Spotted--I 15; II 15; III 3, 12, 79; V n42; VI 13, 15, 39, 40; VII n10, 35; VIII 13, 16, 30, n37; IX 6; X n4, n29, 44; XI 13, 22, 24, 57; XII 51, 89, 94; XIII 5, 29, 36, 56.

Sandpiper, Stilt--IV 24; V 2, 51; XI 13, 24; XII 50, 51, 55, 57; XIII 5, 9, 76.

Sandpiper, Western--II 35; III 49, 79; IV 24; V 9, 57 two; VI 19, 24, 49; VIII 22 two; XI 24; XII 52; XIII 5, 76.

Sandpiper, White-rumped--III 49; V 51, 57; VI 13, 49; VIII 22; X 50; XI 24; XII 57, 58, 88; XIII 5, 57.

Sapsucker, Yellow-bellied--III 1, 3, 4, 64, 80; IV 6, 10, 29; V 30, 38, 63; VI 25; VII 20, 36; VIII 8, 13; X 14, 51, 52; XI 25; XII 28, 52, 63, 91, 93; XIII 6, 19, 30, 35, 74.

Scaup--I 2, 3; II 1, 17; III 2, 11; IV 1, 4, 5, 10; V 11, 14, 26, 68; VI 22; VIII 6; XI 13.

Scaup, Greater--III 3, 4; VI 18, 45; VII 19, 35; VIII 20, 30, 44; IX 3; XI 23; XII 51; XIII 4, 29, 32, 38, 82.

Scaup, Lesser--I 13; III 2, 3, 4, 48; V 37, 51; VI 18; VII 35; VIII 21, 30; IX 6, 25; X 11 two; XI 13, 19, 23; XII 51; XIII 4, 29, 82.

Scoter, American--III 4; IV 5; V 25, 56, 68; VI 23, 35, 48; VIII 6; XI 23; XII 51; XIII 4, 18, 29, 76, 82.

Scoter, Common--XIII 82.

Scoter, Surf--III 3, 4; IV 5; V 25, 56; VI 22, 35, 48; VIII 6, 28; IX 15; XI 23; XII 50, 51; XIII 4, 29, 76.

Scoter, White-winged--I 2; III 3, 4; IV 5; V 11, 25, 56; VI 22, 35, 39, 48 three, 55; VII 35; VIII 6, 30, 44; IX 15; XI 20, 23; XII 51; XIII 4, 29, 76.

Seed-eater, Sharpe's--XI 30.

Shearwater, Cory's--III 56; XIII 4, 9.

Shearwater, Greater--III 57; V 50; XI 67; XII 57.

Shearwater, Sooty--XI 30.

Shoveler--XIII 82.

Shoveller--IV 4, 5, 10, 12; V 9, 14, 21, 38; VI 12, 15, 22, 31, 35, 39; VII 23, 35; VIII 6; IX 29; X 11; XI 19, 23; XII 33, 62; XIII 4, 82.

Shrike, Loggerhead--VI 27; XII 55; XIII 81, 82.

Shrike, Migrant--II 10 two; III 3, 4, 51; IV 7, 10; V 23; VI 15, 57; VII 36; VIII 9, 15; IX 8; X n3, n7; XI 15, 26; XII 52; XIII 7, 81, 82.

Shrike, Northern--VII 20; VIII 3, 9, 15; XI 22, 26, 61; XII 57.

Siskin, Pine--I 16; III 1, 3, 4, 7, 12, 16; IV 30; V 10, 32, 53; VI 15, 28, 33, 42, 51; VII 20, 37, 40; VIII 9, 48; IX 32; X 15 two, 16, 51, 52; XI 27; XII 8, 28, 33, 50, 53, 55, 64; XIII 8, 74, 78.

Skimmer, Black--III 50; V n43, 52, 57; VI 19; VII n10; VIII 29, n37; X n4, n30; XI n5, 25; XII n43, 52, 88; XIII 6, n12, 19, 30, 32, n58.

Skowk--VIII 19.

Snipe, Common--XIII 82.

Snipe, Wilson's--II 9, 10; III 2; IV 6, 12; V 22, 57, 63; VI 15, 24, 32, 39, 60; VII 19, 35; VIII 7, 13, 30, 45; X 12; XI 13, 24; XII 51, 62 two; XIII 5, 19, 22, 29, 36, 38, 76, 82.

Sora--V 68; VI 19, 24; VIII 7, 15; XI 24, 31; XII 51; XIII 5.

Sparrow, Bachman's--III 73; VII 50; XI 27, 28, 61; XIII 81.

Sparrow, Chipping--I 22; II 10, 16, 29, 32 n33; III 3, 4; IV 7; V n48; VI 28, 43, 44; VII n15, n16, 20, n24, 31, 37; VIII 4, 9, 14, 32, n33, n42, 48; IX 4, 8, 30; X n9, n10, n35, n36, 13, 45, 46, 53; XI n10, n11, 15, 27, 58; XII n6, 29, n48, 53, n47, 57, 62, n100; XIII 9, n17, 28, 31, 35.

Sparrow, English--I 22; II 1, 2, 10, 11, 16, n26, 27, 32; III 1, 2, 3 two, 4, 12, 14, 56, 61, 88; IV 3, 7, 21, 30; V 11, n33, n34; VI 19, 27, 44; VII n15, 37; VIII 9, 11, 32, n42; IX 4; X n8, 16, n35, 47; XI n9, 27, 28; XII n6; 33, n47, 53, 58; XIII 8, n16, 28, 31, 82.

Sparrow, Field--I 3, 22; II 10, 16, n29, n37; III 1, 2, 3 two, 4, 12, 88; IV 4 two, 7; V 23, 32, 38, n48; VI 12, 19, 28, 30, 33, 34 two; VII n15, n16, 17, 31, 37; VIII 4, 9, 32, n43; IX 8; X n9, n10, n36, 46 three; XI n10, n11, 27, 31; XII 8, n48, n47, 53, n100; XIII 9, n17, 31.

Sparrow, Fox--I 2, 22; III 1, 3, 4, 82, 88; IV 4, 7, 13, 18, 32; V 23, 30, 38; VI 29, 34, 43; VII 37, 40; VIII 9; IX 8, 10; X 51; XI 27, 58; XII 50, 53, 62, 64; XIII 9.

Sparrow, Grasshopper--III 82; IV 21; V 32, n48, 58; VI 43; VII n16, 37; VIII 32, 48; IX 8; X n10, 13; XI n10, 15, 27, 58; XII n48, 89, 94; XIII 8, n17, 31, 36, 56.

Sparrow, Henslow's--III 4, 82, 86; IV 21; VI 43; VII 37; VIII 32; XI 3, 27, 31; XII 53; XIII 8, 31, 32.

Sparrow, House--XIII 82.

Sparrow, Ipswich--III 4; IV 2; VI 20, 28, 33; XI 27; XII 91; XIII 8, 9.

Sparrow, Lark--IV 24; VI 58; VIII 26; XI 27, 28, 63; XII 31, 57, 103; XIII 9.

Sparrow, Lincoln's--III 82, 88; V 10; VI 19, 29; VII 37; IX 27; XI 27; XII 50, 90; XIII 9, 31.

Sparrow, Savannah--I 16; II 10; III 4, 72, 82, 88 two; IV 7, 14, 20, 30; V 32, 53; VI 28, 35, 51, 52; VII 37, 40; VIII 9, 32, n43; IX 8; X 51; XI 21, 27, 61; XII 53; XIII 8, 28, 31, 36.

Sparrow, Seaside--III 4; VI 19, 28, 33; VIII 26, 32; X n36; XI n11, 27; XII 53; XIII 8, n10, n17, 31.

Sparrow, Sharp-tailed--III 4, 52, 88; IV 7; VI 28; VII 37; VIII 9, 26, 32; X 55; XI 27; XII 25, n41, n48, 53; XIII 8, n10, n17, 31.

Sparrow, Song--I 1, 2, n13, 22; II 1, 2 two, 3, 11, 16, 18, 32, 43; III 1, 2 two, 3 two, 4, 5 two, 11, 12 two, 16, 45, 52 two, 60, 61, 62, 63, n74-75, 85, 88 three; IV 7, 11, 13, 21, 30 three; V n16-18, 23 two, n48; VI 19, 29, 34, 44 two, 45 two; VII 7, n15, n16, 31, 37, 40; VIII 9, 32, n43, n42; IX 10; X n9, n10, n35, n36, 46; XI n10, n11, 27; XII n48, 52, 57-58, 62, n100; XIII 9, n17, 31, n71.

Sparrow, Swamp--I 22; II 2, 28; III 1, 2 two, 3 two, 4, 73, 82; IV 4 two, 7, 30; V n48; VI 29; VII 37; VIII 9, 26, 32; IX 27; X n10, n36, 46; XI n10, n11, 27; XII 53, 94; XIII 9, n17, 31.

Sparrow, Tree--II 1, 2 three; III 1, 2 two, 3 two, 4, 5, 6, 7, 16,

88; IV 2, 4, 7, 13, 14, 18; V 14, 26, 30; VI 19, 28; VII 7, 23; VIII 9; XI 27; XII 8 two, 28; XIII 9.

Sparrow, Vesper--I 22; II 10, 16; III 4, 82; IV 2, 7, 10; V 32, n48, 66; VI 28, 43; VII 37; VIII 4, 9, 14, 32, n43; IX 8; X n10; XI n11, 15, 27, 58; XII 53; XIII 8, 31.

Sparrow, White-crowned--I 21, 22; III 3, 82, 88; IV 4, 7, 21; V 10 two, 23, 58, 63, 68; VI 15, 29, 34, 43; VII 17, 20, 23, 37, 40; VIII 9, 29, 32, 48; IX 10, 15, 32; X 51, 55; XI 21, 27; XII 7, 28, 50, 53, 39, 90, 93; XIII 9, 31, 39.

Sparrow, White-throated--I 22; II 2 two, 3, 10, 11, 16, 28, 44; III 1, 2 two, 3 two, 4, 5 two, 11, 12, 52, 82, 88 three; IV 7, 11, 13, 30 two; V 32, 58; VI 19, 29, 34; VII 7, 17, 23, 31, 37; VIII 9, 20, 32, 48; IX 27; X n3, n10, 37, 51; XI 21, 27, 61; XII 8, 28, 50, 53, 55, 90; XIII 9, 28, 31, 36, 58, 74.

Spoonbill, Roseate--XI 30.

Starling--I 22; II 1, 2 two, 10, 16, n18, 26, 27, 33, n34, 37, 39-41, 43, 44; III 1, 2 two, 3, 4, 5, 12 two, 16, 46, 56, 60, 62; IV 7, 21, 30; V 11, 14, 33, 34, n46, 63; VI 19, 27, 44 two; VII n14, 31, 36; VIII 9, 31, n41; IX 4; X n7, n33, 37, 47; XI n9, 26; XII n6, n46, 53, 54, 57; XIII 7, n15, 28 two, 31.

Stilt, Black-necked--XI 30.

Swallow--III 47, 66; XII 39.

Swallow, Bank--II 16, 36; III 66; VII n12, 36; VIII 23-24, 31, n38; X n5; XI 25, 59; XII n44, 52, n59; XIII 6, n14, 28, 30, 36.

Swallow, Barn--II 16, 36; III 14, 51, 61, 66, 80; V 9, 11, 31, n44; VI 14, 41, n52; VII 31, 36; VIII 14, 31, n38; IX 8, 30; X n5, 13, n31, n46, 53; XI n7, n9, 15, 25, 57, 59; XII n44, n72, 52, 57, 89, n100; XIII 6, n14, 28, 30, 35, 56.

Swallow, Cliff--III 66; IV 27; V 2, 11, n44, 49, 52; VI 41; VII 36; VIII n39; IX 16; X n32, 52; XI 25, 59; XII 29, 50, 52; XIII 6, 28, 30, 36, 56, 77.

Swallow, Rough-winged--II 16, 36; III 12, 51, 61, 66; V 11 two, 38; VI 41; VII n12, 36; VIII n38; IX 8, 26, 30; X n5, n31, n44; XI n7, 15, 25, 27; XII n44, 52; XIII 6, n14, 19, 30, 36, 38.

Swallow, Tree--II 36; III 51; V 11, 22, 31, 52, 68; VI 33, 40; VII 36; VIII 14, 29, 31, n38; IX 8, 26, 30; X n5, 13, n31, n46-47, 51, 53; XI n7, 15, 16, 25, 57, 59; XII n44, 49, 52, 63, 89, 93; XIII 6, n14, 19, 30, 36, 38.

Swan, Mute--XI 55.

Swan, Whistling--I 2, 3 two; II 1, 2, 11, 18; III 2, 3, 4, 6, 7, 11; IV 4, 5, 10, 14, 15, 16, 19; V 14, 25, 26, 30, 37 two, 56; VI 15, 16, 21, 31, 39, 45 two, 59; VII 18; VIII 6, 12, 21, 28, 30, 44; IX 6, 25; X 12, 39; XI 13 two, 19, 23, 55; XII 51, 62 two; XIII 4, 18, 22, 29, 37.

Swift, Chimney--I 16, 42, 43; III 7, 12, 45, 61, 79, 84; IV 20, 29; V 11 two, n43; VI 40, 56; VII n11, 36; VIII 13, 30, n37; IX 8, 30, 31; X n4, 13, n30, 46, 53; XI n6, 15, 25, 57; XII 29, n43, 52, 57, 89, 90, 94; XIII 6, n13, 19, 30, 54, 56.

Tanager, Scarlet--II 16; III n76, 82; V 19, n47; VI 51; VII n15, 31, 37; VIII 20, 23, 32, n42; IX 26, 30, 32; XII 29, 31, n47, 53, 87, 89, 94; XIII 8, 20, 31, 36, 56, 75.

Tanager, Summer--I 15; V 54; VI 51; VII 37; VIII 32, 47; X 45;

XI n3, n10, 27; XII n47, 53, 58, 103; XIII 8, n17, 20, 31, 35, 36, 56, 58, 78.

Tanager, White-winged--XI 30.

Teal, Blue-winged--IV 1, 4, 5, 12, 14, 28; V 51, 54, 56; VI 22, 39, 44; VII 23, 35; VIII 6, 29, 30; X n3, 12, n28, n49; XI n4, 19, 23, 31; XII 51, 62 two, 94; XIII 4, n10, n11, 29.

Teal, Common--XIII 81, 82.

Teal, European--VI 19, 22, 35, 37; VIII 3, 6; IX 6; XI 13, 23, 28; XII 8, 57; XIII 4, 9, 82.

Teal, Green-winged--III 4; IV 1, 5; V 21, 22; VI 15, 35, 37, 45, 48; VIII 6, 13; XI 13, 23; XII 33; XIII 4, 76.

Tern--V 52.

Tern, Black--III 50, 79; V 52, 63; VI 40, 49, 56, 60; IX 25, 29; XI 25, 67; XII 52, 58; XIII 6.

Tern, Cabot's--III 56.

Tern, Caspian--I 16; II 16-17; III 50; IV 1, 20, 29; V 9, 31, 52, 57 five, 63; VI 19, 25, 40, 49, 56; VII 20, 35; VIII 13, 31; IX 25; X 50; XI 25, 67; XII 52; XIII 6.

Tern, Common--I 14, 15, 18; II 35; III 50 two, 79, 85; IV 1; V n43; VI 49, 56; VII n10, 20, 35; VIII 22, 31, n37; IX 25; X n3, n30, 45; XI n5, 20, 24; XII n3, n4, n27, n43, 52, n103 two, 104; XIII 6, n12, 30, n57, n58, n77.

Tern, Forster's--II 18; III 7, 50 three, 71, 79, 85; IV 1, 12; V 9, 68; VI 19, 25, 49, 56; VII 20; VIII 22, 31, n37, 46; IX 25, 29; X 12, n30, 45, 50; XI n5, 13, 24, 56; XII n27, n43, 52; XIII 6, n12, 30, n58.

Tern, Gull-billed--III 50, 56; IV 26; V n41, n43, 54, 57, 68; VI 56; VII n10; VIII n37; X n4, n30; XI 24, 31, 67; XII 26, n43, 52, 58; XIII 6, 30.

Tern, Least--I n18, n21; II 29; III 50; IV 20, 25; V n43, n52, 63; VI 49, 56, n60; VII n10, 35; VIII 29, n37; IX 25, 29; X n4, n30, 46; XI n5, 13, 25; XII n3, n4, n43, 26 two, 52, n103; XIII 6, n12, 30, n58, 77.

Tern, Roseate--VI 49; VIII 22; IX 25; XI 24, 67; XII 57, XIII 6, 9.

Tern, Royal--III 56; IV 1; V n43, 52, 57 four; VI 13, 15, 49, 56; VII 20, 23; IX 29; X 12, 50; XI 25, 31, 56, 67; XII 26 two, n27, n43, 52, 103; XIII 6, n12, 30, n58, 77.

Tern, Sooty--XI 25, 28.

Thrasher, Brown--II n16, n29, 33; III 4, n76, 80, 84; IV 1, 7, 13, 20; V 3-4, 10, 11, 14, 20, 26, n45, 63, 68; VI 26, 33, 41; VII n13, 20, n24, 36, 40; VIII 8, 14, 19, 31, n40; IX 8, 9, 30; X n7, 13, n33, 37, 53; XI n8, 15, 26, 57; XII 29, 30, n45, 52, 62, 89, n100; XIII 7, n15, 30, 39, 56, 75.

Thrush, Bicknell's--VI 57.

Thrush, Gray-cheeked--III 81; V 19; VI 57 three; VII 36; VIII 27, 29, 46; IX 26 two, 30, 31, 32, 53; XI 26, 57; XII 52, 89, 90; XIII 7, 28, 35, 36, 56, 58 three.

Thrush, Hermit--I 22, n25-26; II 8-9, 18; III 1, 2 two, 3, 4, 16, 80; IV 4 two, 7, 10, 14; V 19, 23, 38, 54, 63; VI 27, 38; VII 36; VIII 4, 8, 24, 30, n35; IX 8, 13, 32; XI 3, 26; XII 28, 52, 90, 93; XIII 7, 30, 35, 58 two.

Thrush, Olive-backed--III 81; V 54 two, 68; VI 57; VII 36; VIII 20, 23, 24, 27, 29, 31, 46; IX 26, 30, 31; X 37, 53; XI 15, 16, 26, 57, 59,

63; XII 8, 28, 29, 52, 55, 87, 89, 90, 94; XIII 7, 28, 30, 36, 56, 74, 75, 77, 81, 82.

Thrush, Red-winged--XIII 82.

Thrush, Swainson's--XIII 81, 82.

Thrush, Wood--I n12, n13; II 16, 33, n36, 37, 44; III 12, 45, 60, 62, 63, n76, 81; VII n14, n15, n24, 36; VIII 14, 20, 27, 31, n40, n41; IX 8, 30; X n7, 13, n33, n43, 47, 53; XI n8, n10, 15, 26, 57; XII 29, n46, 52, 89, 94; XIII 7, n15, n17, 30, 56.

Titmouse, Tufted--I 1, 2, 22; II 2 three, 9, 11, 16, 32; III 1, 2 three, 3, 4, 5, 6, 14, 61; IV 4, 6, 21, 30; V 33, 34, n45; VI 19, 26, 33, 34 two; VII n12, 30, 36, 40; VIII 8, 19, 31, n39; X n6, n32, 44 two; XI n7, 25; XII n41, 52; XIII 7, n14, 22, 30, 67.

Tityra, Masked--XI 30.

Toucanet, Emerald--XI 30.

Towhee, Brown--XI 30.

Towhee, Red-eyed--I 2, 3, 23; II 16, 34; III 3 two, 4, 12, 60, 61, 63, n76-77, 85; IV 2, 4, 7, 10, 13, 21; V 19, 20, 23, 25, 32, 38, n48; VI 15, 28, 33, 42; VII n15, n16, 37, 40; VIII 4, 9, 32, n43; IX 8, 10; X n10, 13, n35, 46; XI n10, 27, 63; XII n48, 53, 57, 62; XIII 8, n17, 31, 81, 82.

Towhee, Rufous-sided--XIII 82.

Turkey, Wild--VI 19, 20; VII 28; VIII n35; X 56; XI 24; XII 50, 62; XIII 5.

Turnstone, Ruddy--II 35; III 48; IV 19, 24; V 9 two, 30, 51; VI 19, 24, 49; VII 19, 23; VIII 29, 45; XI 24; XII 51, 58; XIII 5, 29, 77.

Veery--II 16, 44; III 45, 64, 81; V 54; VI 50; VII 36; VIII 23, 24, 29, 31, 46; IX 26, 31; X 13; XI 3, 15, 21, 26, 57, 59; XII 52, 89, 94; XIII 7, 28, 30, 36, 56, 58 two, 74, 75, 77.

Vireo, Black-whiskered--XIII 54.

Vireo, Blue-headed--II 16; III 81, 88; V 31, n46, 66; VI 42 two, 57; VII 36; VIII 14, 15, 31, n41, n42, 47; IX 8, 9, 30; X 53, 54; XI 15, 21, 26, 57; XII 30, 50, 53, 58, 89, 90; XIII 7, 20, 31, 35, 56, 82.

Vireo, Philadelphia--VI 50, 57 two; VII 36; VIII 24; IX 9, 32; X 15, 54; XI 26, 31, 63; XII 30, 53; XIII 7, 58.

Vireo, Red-eyed--II 16, n29, 43; III 14, 52, 60, 62, 63, n76, 81; V 20, 34, n46; VI 42, 57; VII n14, n15, n23, n24, 36; VIII 14, 20, 31, n41, n42; IX 5, 26, 30; X n8, n9, 13, 14, n33, n35, 43, n44, 46, 47, 53; XI n9, 15, 26, 57, 63; XII 29, 30, n46; 50, 53, 89, 90, 94, 103; XIII 7, n16, n17, 20, 31, 33, 36, 56, 67, 75.

Vireo, Solitary--XIII 81, 82.

Vireo, Warbling--II 16; III 12, n57, 60, 61 two, 62, 63; V 63; VII 36; VIII 31, n41; XI 26, 57; XII 53, n93, 94; XIII 7, n10, n16, 28, 31, n35, 36, 56.

Vireo, White-eyed--II n36; III 61, 81; V n46; VI 42 two, 57; VII n14, 36; VIII 14, 27, 31, n41, 46; IX 26, 30; X n8, n9, 13, 14, n27, n33, 46 two, 47, 53; XI 15, 26, 57; XII 29, 53, 89, 90, 94; XIII 7, 31, 36, 56, 75.

Vireo, Yellow-throated--II 16; III 46, 81; V 39, n46; VI 42, 57; VII 36; VIII 14, 20, 31, n41, 47; IX 26, 30; X 13, 43, 53; XI 15, 26, 57; XII n46, 53, 89, 94; XIII 7, n16, n17, 31, 36, 56.

Vulture, Black--III 2, 3, 4, 11, 48, 85; IV 5, 19 two; V 39, 63; VI 13, 23; VII 19, 35, 39; VIII 7, 21, 30, 45; IX 6; X n3, 4, n29, 46;

XI 20, 23, 31; XII 51, 62, 94; XIII 5, 10, 29.

Vulture, Turkey--I 22; II 2, 9, 15; III 1, 2 three, 3, 4, 7, 11; IV 3, 4, 5, 32; VI 19, 23, 32; VII 31, 25; VIII 7, 30, n36; X n28, 46; XI n5, 23; XII 7, 51, 57; XIII 4, 29.

Warbler--II 28; III 78, 81.

Warbler, Bay-breasted--II 16; III 46, 81; V 52, 63, 68; VI 50, 51; VII 37; VIII 23, 25, 28, 32; IX 26, 27, 30, 31; X 51, 53; XI 26, 31, 58; XII 28, 29, 53, 89, 90, 91, 94; XIII 8, 36, 56, 75.

Warbler, Black and White--II 16; III 81, 84; V 31, 58; VI 42, 50, 51, 58; VII 36; VIII 14, 16, 20, 25, 31, n35; IX 7, 8, 10, 13, 27, 30; X 13, n34, 44, 45, 53, 54 two; XI n9, 15, 26, 57; XII 29, 53, 89, 94; XIII 7, 28, 31, 36, 56, 74, 75, 82.

Warbler, Blackburnian--II 16; III 46, 81; IV 21, 24; V n41, n46, 52, 58; VI 50, 51; VII 37; VIII 20, 23, n25, 28, 29; IX 13, 26, 27, 30; X 51, 53; XI 15, 26, 31, 58; XII 28, 29, 53, 89, 90, 94; XIII 8, 28, 31, 32, 56, 78.

Warbler, Blackpoll--II 16; III 81, 88; IV 24; VI 14, 51; VII 37; VIII 20, 23, 26, 32, 47; IX 26, 30; X n8, 13, 51, 53; XI 15, 26, 58; XII 28, 29, 30, 53, 87, 89, 90, 94; XIII 8, 31, 32, 36, 55, 56, 74, 75, 82.

Warbler, Black-throated Blue--II 16; III 81; V 39, n46; VI 50, 51, 58; VII 37; VIII 20, 23, 25, 26, 28, 32, n41; IX 13, 26, 27 two, 30; X 13, n34, 51, 53; XI 15, 26, 58; XII 28, 29, 49, 53, 89, 90, 94; XIII 7, 28, 31, 32, 36, 54, 56, 74, 75.

Warbler, Black-throated Green--I 16; II 16; III 6, 45, 47, 51, 81, 84; IV 31; V 31, n46, 53, 58, 63; VI 42, 50, 58 two; VII 37; VIII 14, 20, 25, 28, 32; IX 7, 8, 27, 30; X 13, 51, 53; XI 15, 26, 58; XII 28, 29, 30, 53, 55, 89, 90, 91, 94; XIII 7, 28, 31, 32, 36.

Warbler, Blue-winged--II 16; III 64, 81; IV 24 two; V 52, 53, 63; VI 50, 51 two, 58; VII 37; VIII 20, 23, 25, 27, 28, 32; IX 26, 27; X 13, 54; XI 15, 16, 26, 57; XII 53, 89, 94; XIII 7, 28, 31, 32, 35, 56, 78.

Warbler, Brewster's--VI 51.

Warbler, Canada--II 16; III 46, 51, 82; VII 37; VIII 20 two, 23, 25, 26, 27, 28, 32, 47; IX 26, 27 two, 30; X 51, 53; XI 27, 58; XII 28, 49, 53, 89, 90, 94 two; XIII 8, 31, 33, 36, 55, 56.

Warbler, Cape May--III 46 two, 81; V 52, 58 two, 63, 68; VI 42, 50, 51; VII 37; VIII 23, 25, 27-28, 32, 47; IX 26, 27, 30, 32; X 13, 51, 53; XI 15, 16 two, 26, 58, 63; XII 28, 29, 49, 53, 94; XIII 7, 20, 28, 31, 32, 35, 54, 56, 74, 75.

Warbler, Cerulean--II 16; III 46 two, 64, 72; IV 21, 24, 27, 63; VI 60; VII 37; VIII 27, 32, 47; IX 3, 13; X 15, 54; XI 16, 26, 58; XII 53; XIII 8, 31, 35, 36.

Warbler, Chestnut-sided--II 16; III 81; IV 21, 24; V 31, n46, 49, 53 two, 58; VI 50, 51, 58; VII n14, 37; VIII 20, 23, 25 two, 28, 32, 47; IX 26, 27 two, 30; X 13, 51, 53; XI n9, 15, 26, 58; XII 28, n32, n46, 53, 89, 90, 94; XIII 8, n10, n16, 28, 31, 32, 36, 56, 78.

Warbler, Connecticut--III 82; V 10; XI 27, 63; XII 28, 29, 31; XIII 8, 75.

Warbler, Golden-winged--VI 51 two, 58 two; VII 37; VIII 23, 25, 27, 31; IX 26, 26-27, 27; X 13, 54; XI n3, n9, 16, 26, 57; XII n32, n46, 53, 93; XIII 7, 31, 32, 36.

Warbler, Hooded--II 16; III 46, 51, 82; V 32, n47, 58; VI 42, 51,

58; VII n15, 37; VIII 14, 25, 32; IX 26, 27, 30; X 13, n34, 43 two, 53; XI 15, 27, 58; XII n47, 53, 89, 90, 94; XIII 8, 31, 36, 56.

Warbler, Kentucky--II 16; III 46 two, 47, 82; V 32, 58; VI 51; VII n15, 37; VIII 20, 23, 25, 32, 47; IX 26, 27, 30; X n8, 13, n34, 43; XI n9, n10, 15, 21, 27, 58; XII 89; XIII 8, 28, 31, 36, 56.

Warbler, Magnolia--II 16; III 46, 81; V n46, 53, 58; VI 50, 51 two, 58; VII 37; VIII 20, 23, 25, 26, 27, 32, 47; IX 13, 26, 27, 30; X 51, 52; XI 15, 16, 53; XII 28, 29, n32, n46, 53, 90; XIII 7, 31, 32, 36, 56, 74, 75.

Warbler, Mourning--III 46, 82; V n41 two, 52; VI 50; IX 27; XI 27, 61, 63; XII 31, 50, 58, 89, 90, 103; XIII 8, 58.

Warbler, Myrtle--I 2; II 2, 10, 11, 16, 28; III 1, 2 three, 3, 4, 6, 12, 16, 85, 88 two; IV 4 two, 7, 11 two, 24, 31; V 11, 31, 39; VI 27, 33, 51 two; VII 7, 20, 23, 37; VIII 4, 9, 20, 32; IX 8; X 51; XI 26, 59, 60; XII 8, 28, 53, 55, 63, 90; XIII 7, 22, 28, 31, 36, 56, 74, 78.

Warbler, Nashville--II 44; II 54, 81; IV 21; V n41, n46, 52, 63, 68; VI 14, 42, 58 two; VII 37; VIII 23, 27, 32, n41; IX 5, n13, 26, 30, 31; X 13, 15, 51, 52, 53; XI 26, 57; XII 28, 53, 89, 90, 94; XIII 7, 28, 31, 32 two, 58.

Warbler, Orange-crowned--III 82; V 58; VI 14, 42; VII 20; VIII 47; XI 26; XII 8, 30-31, 91, 103; XIII 7, 78.

Warbler, Palm--IV 4; VI 27; VII 20, 37; VIII 9, 25; IX 16; XI 26; XII 28, 31, 33.

Warbler, Parula--II 16; III 45, 81, 84; V 31, 39, n46; VI 42, 50; VII 30, 37; VIII 14, 20, 32; IX 7, 8, 30; X 13, 15, 44, 53; XI 15, 26, 57; XII 29, n46, 52, 87, 89, 90, 94; XIII 7, n10, n16, 28, 31, 36, 56, 58 two.

Warbler, Pine--II 10, 16; III 81; IV 4, 7; V 31; VI 27, 42; VII 37; VIII 14, 29, 32, n35; IX 8, 10, 30; X n3, n8, 53; XI 3, 16, 26; XII 53; XIII 8, n10, n16, 31.

Warbler, Prairie--II 16, n37; III 51; IV 29; V 31, n46, 52; VI 42, 58; VII n15, 37; VIII 14, 25, 32; IX 7, 8, 27, 31; X 13, n34, 46; XI n9, 15, 16, 26, 58; XII 53, 89, 94; XIII 8, 31, 36, 75.

Warbler, Prothonotary--II 15, 16; III 51, 81; IV 20, 25; V 31, n46, 53; VII 36; VIII 14, 26, 31, n41, n42, 47; X n34, 48, 54; XI n9, 16, 26, 57, 67; XII n46, 53, 94; XIII 7, 28, 31.

Warbler, Sutton's--X 15; XIII 58.

Warbler, Swainson's--III 56, 72; IV 20, 25; V 24, 54, 63; VIII 25; X 15, n34, 54; XI 22, 26, 31, 67; XII n46, 57; XIII 7, 31.

Warbler, Tennessee--III 54, 81; V 52, 58, 68 two; VI 50 two, 51 two; VII 37; VIII 20, 23, 25, 27 two, 32, 47; IX 26, 27; X 15, 51, 52, 53, 54; XI 26, 31, 57; XII 28, 29, 30, 53, 87, 90, 94, 103; XIII 7, 56, 74, 75, 78.

Warbler, Townsend's--XI 30.

Warbler, Western Palm--I 16; II 28; III 4; IV 2, 7; V 58, 68; VI 18, 51; VIII 47; IX 3; X 15, 51, 53; XI 63; XII 53, 91; XIII 8, 74, 81.

Warbler, Wilson's--III 64, 82; IV 4, 7, 24; V 10, 53; VI 19, 51; VII 37; VIII 23, 27, 28; IX 26, 27 two; X 15, 53, 54 two; XI 27, 31, 58; XII 50, 53, 89, 90, 94, 99, 103; XIII 8, 36.

Warbler, Worm-eating--II 16; III 45, 51, 64, 81; IV 20; V 53, 63; VI 58; VII n14, 36; VIII 23, 25, 31, 47; IX 26, 27, 30; X n8, n9, 13, 54; XI 15, 16, 26, 57; XII 53, 89, 94; XIII 7, 31, 36, 56.

Warbler, Yellow--II 16; III 12, 51, 60, 61, 62, 63; V 31, 36, n49, 63; VI 47; VII n14, n24, 37; VIII 14, 27, 32, n41, n42; IX 8, 16; X n8, n9, 13, n34, 46; XI n9, 15, 26, 58, 61; XII n46, 53, 89, 94; XIII 7, 31, 36, 56.

Warbler, Yellow Palm--III 4; IV 31; V 10, 32, 39; VI 14, 18, 33, 42, 51; VIII 14; IX 7, 8; X 15, 51, 53; XI 58; XII 91, 93; XIII 8, 36, 81.

Warbler, Yellow-throated--IV 20, 25; VII 37; VIII 25, 32, n41, 47; IX 8, 10; X 15, n15, 34, 44; XI n9, 15, 21, 22, 26, 31, 58, 61; XII 53; XIII 8, 28, 31, 58 two.

Water-thrush, Louisiana--II 16; IV 20, 29; V 20, 39; VI 42; VII 37; VIII 14, 32, n42, 47; X 44; XI n9, 15, 27, 58; XII 53, 87, 89, 90, 94; XIII 8, n16, 31, 35, 56, 82.

Water-thrush, Northern--III 82; IV 24 two; V n47; VI 14, 51 three; VII 37; VIII 20, 23, 25, 32, 47; IX 13, 16, 26, 27, 30; X n8, n9, 51, 53; XI 15, 21, 27, 58, 63; XII 39, 53, 89; XIII 8, 28, 31, 33, 36, 56, 75, 82.

Water-turkey--XIII 82.

Waxwing, Cedar--II 16, 29; III 2, 3, 5, 6, 14, 61, 88 two; IV 4, 7; V n46, 68; VI 27, 57, n60; VII n14, 36; VIII 9, 31, n41; IX 8, 9; X n7, 44, 51; XI n8, 26; XII 28, n32, n46, 52, 62, 63, 94; XIII 7, n10, n15, 28, 31, 36.

Whimbrel--XIII 82.

Whip-poor-will--II 16; III 45, 79; IV 20, 26; V 31, 63; VII 36; VIII 13, 31, n35; IX 8; X 13; XI n3, n6, 15, 25, 57, 60; XII 52, 89, 90; XIII 6, n10, n13, 30, 56.

Widgeon, American--XIII 82.

Widgeon, European--II 41; IV 1, 4, 5; V 9, 30; VI 22, 39, 55; VII 19, 38; VIII 45; XI 13, 23, 31, 56; XII 57; XIII 19.

Willet--III 48, 64, 79; IV 20, 24, 25, 26 two; V 51 three; VIII 30; XI n3, n5, 24, 31; XII n42, 51; XIII 5, 29, 76.

Woodcock--II 9, 15, 18, 37; IV 22; V 22, 38, n42; VI 24, 32; VII 35, 39; VIII 3, 7, 30, n36, 45; IX 6, 15, 25, 29; X n4, n29, 12; XI 24; XII 51; XIII 5, 19, 29, 38, n57.

Woodhewer, Ivory-billed--XI 30.

Woodpecker--I 1.

Woodpecker, Acorn--XI 30.

Woodpecker, Downy--I 2; II 2 three, 9, 11, 15, 16, 18, 32; III 1, 2 three, 3, 4, 5, 12 two, 61, 77, 88 two; IV 6, 13, 30; V n44; VI 19, 25, 34, 44; VII 7, n11, 23, 36; VIII 8, 31, n38; X n5, n31, 37, 45; XI n6, 25; XII n44, 52, n100; XIII 6, n13, 30, 67.

Woodpecker, Hairy--I 2, 22; II 2, 9, 16; III 1, 2, 3, 4; IV 6, 13, 30; VI 19, 25; VII n11, 20; VIII 8, 31, n38; X n31, 37, 43; XI n6, 25; XII 52, 93; XIII 6, n10, n13, 30.

Woodpecker, Pileated--III 4; IV 4, 6; V n43, 63; VI 25, 35; VII n11, 20; VIII 8, 31, n38; IX 16; X n5, n30, 52; XI n6, 25, 60, 67; XII 27, n41, 52; XIII 6, 19, 30.

Woodpecker, Red-bellied--I 22; II 2, 9, 16, 34, n34, 44; III 1, 2, 3, 4, 77, 84; IV 6, 12, 30; V n43; VI 25; VII n11, 36, 39; VIII 8, 31; X n30, 45; XI 25; XII 8, n44, 52, 63; XIII 6, n13, 22, 30.

Woodpecker, Red-cockaded--XII 104; XIII 6, 9.

Woodpecker, Red-headed--II 31-32; III 50, 80, 84 two; IV 1, 4, 6,

13, 29, 30; V 20, 37, n43; VI 25, 56; VII n11, 20, 36, 39; VIII 8, 31, n38; X n31; XI n6, 25, 52; XII 27, n44, 52; XIII 6, n13, 19, 30.

Wren, Bewick's--III 71; IV 20, 29; VIII 24, n39; IX 9; X 14, 48, 54; XI n8, 26, 39, 61; XIII 7, 20, 30, 32, n51-52.

Wren, Carolina--I 2; II 2 three, 16; III 1, 2 two, 3, 4, 5, 12, 46, 88 three; IV 4, 6, 12, 13, 24; V 34-35, n45; VI 19, 26, 34, 44; VII n12, n15, 36; VIII 4, 8, 31, n39; IX 7; X n3, n6, n9, n32, 43, n44, n45, 47; XI 26, 28, n51, 61; XII n45, 52; XIII 7, n15, 22, 30.

Wren, House--II 16, n33, 43, 44; III 51, 61, 80, 84; V 9, 33, 34 two, n 45, n66 two; VI 19, 26, 41, 57; VII n12, 30, 36; VIII 8, 14, 16, 31, n39; IX 7, 8, 30; X n6, 13, 14, n32, 53, 54; XI n8, 15, 26, 57, 59, 60; XII n45, 52, 89, 90, 94, n100; XIII 7, n15, 30, 36, 56.

Wren, Long-billed Marsh--II 35, 36; III 3, 4, 14, 51; IV 6; V 23, n45, 63; VI 26, 33; VII n12, 36, 40; VIII 8, 27, 31, n39; IX 7; X n6, n32, 47 three; XI n8, 21, 26; XII 25, n41, 52; XIII 7, n15, 30, 77.

Wren, Short-billed Marsh--III 4, 51; IV 4, 6; V 2, 10, 52; VI 26, 50; VII 36; VIII 8, 24, 31, 46; X 14; XI 16, 26; XII 25, 50; XIII 7.

Wren, Spot-breasted--XI 30.

Wren, Winter--I 22; II 9; III 1, 2 three, 3, 4, 6, 11, 80; IV 6, 24, 29; V 30, 54; VI 26, 38, 41, 50, 57; VII 23, 36; VIII 8, 24, 46; X 51; XI 26; XII 8, 28; XIII 7, 21, 30, 32.

Yellowlegs, Greater--II 35; III 49, 79; IV 4, 6; V 14, 22, 57; VI 13, 15, 24, 32, 40, 60; VII 35; VIII 7, 13, 30; IX 6, 29; XI 20, 24, 57; XII 51, 104; XIII 5, 29, 76, 82.

Yellowlegs, Lesser--III 49, 79; V 9, 21, 22; VI 13, 24, 32, 40, 60; VII 35; VIII 13, 30; IX 6, 25; XI 20, 22, 24, 57; XII 51; XIII 5, 19, 29, 82.

Yellowthroat--II 16, n29; III 12, 45, 52, 60, 61, 63, 82; IV 4, 7; V n47; VI 14, 27, 42, 51; VII n15, 30, 37; VIII 9, 14, 20, 32, n42, 47; IX 7, 8, 30; X n8, 13, 15, n34, 47 two, 53; XI n9, n10, 15, 16 two, 27, 28, 58, 63; XII 29, n47, 53, 57, 87, 89, 94; XIII 8, n10, n16, 28, 31, 36, 56, 75, 82.

AUTHOR INDEX

MARYLAND BIRDLIFE

VOL. 1-13 1945 - 1957

- Abbott, C. F. and K. E.--VI: Chronology of a Barn Swallow Nest at Gibson Island 52.
- Arnold, Elting--IV: Ocean City Trip 25-26.
- Barry, Edwin M.--XI: Avid Avists Affiliate with M.O.S. 66.
- Beasley, Ray J.--I: Field Trip Report 2; Notes on an Ovenbird Nest 7; Bird Books for the Beginner 7-11; A Trip to Smith Point Osprey Colony 17-21; II: Christmas Bird Counts 1945 2, 2-3; A Trip to Cape May, N.J., 34-35.
- Besson, E. John--VII: Golden-crowned Kinglets Sip Maple Sap 29.
- Bond, Gorman M.--II: Bird Trip to the Patuxent Wildlife Refuge 9-10; III: See Irving E. Hampe.
- Bowers, Billy--XII: An Observation of Cooperation 33; A Dead Red-tail Hawk at St. Michaels High School 34.
- Brackbill, Hervey--I: The Incubation Periods of Some Birds at Baltimore 12-13; An Early Slate-colored Junco 24; An Osprey 150 Miles at Sea 24-25; Two Robin Nestlings Fed Opposite Ends of Same Earthworm 25-26; II: Florida Gallinule at Brooklyn on August 26 3; Hermit Thrush Wintering at Baltimore 8-9; At the Feeding Shelf 11-12; Snowy Owls in the Winter of 1945-46 28; Birds Eating Ants 31-32; Our Starling Project, First Report 39-41; Downtown Starling Roosts, Special Bulletin, Publication No. 1; III: Travels of Three Banded Purple Grackles 53; Escaped American Magpie in Baltimore 83; V: Age and Migration Records of Maryland Brown Thrashers 3-4; VII: Some Birds Use Poison Ivy Seeds without Spreading Them 7; VIII Baltimore Orioles in Md. in Winter 10-11; Local Bird Names from Maryland 19; Catbirds Nesting High in Trees 48; IX: Birds Eating Termites 4; XI: Three-brooded Cardinals 29; High-Low Nesting Catbirds 50; XIII: Three-brooded Song Sparrows 71.
- Brackbill, Nina--II: At the Feeding Shelf 34.
- Buchanan, Charles M.--XI: 1954 County Bird Lists 22-28; XII: The Yellow-headed Blackbird at Ocean City 39-40; 1955 County Bird Lists 57-58; Summary of the 1956 Baltimore Saturday "Bird Walks" 93-94; XIII: Summary of the 1957 Baltimore Saturday "Bird Walks" 35-36.
- Buckalew, John H.--VII: First Winter Record of Bachman's Sparrow in Maryland 40.
- Bures, J. A.--III: Kent Island Field Trip 10.
- Burner, Florence H.--I: Bird Trip to the Patuxent Wildlife Refuge 21-22; II: Christmas Bird Count 2; III: Resume, Field Trip Program of 1946-47 86; X: Baltimore Bird Club Trips, 1953 Summary 40.
- Butenschoen, Margarete--X: Behavior Notes 40; XI: Nestling Robins Rescued 53.

Cole, Richard--VI: See Haven Kolb; XI: Two Wintering Orioles Believed to Be Bullock's 49; XII: Grackles "Anting" with Walnuts 86.

Cook, Richard Lee--IV: Westernport Juniors Report 21.

Cooley, Eleanor G.--Breeding Bird Study, Publication No. 2; III: Breeding Bird Census: Shrubby Field with Stream-Bordered Trees 59-63. See also Eleanor Cooley Robbins.

Corbett, Kenneth B.--XI: Additional Birds of Caroline County 19-21.

Crowder, Orville W.--I: Field Trip Report 3; II: Christmas Bird Counts 2; Caspian Tern at Bird River 16-17; III: Watch for Redpolls 5; Club Field Trips 6, 11-12; Finances and the 1947-48 Budget 19; Allegany Activities III: 32; III: Field Trips 30, 64; Hawk Mountain Field Trip 34-35; What Do You Want to Read in Maryland Birdlife? 34; Book Reviews 36-37; IV: Status of Maryland Birdlife 1; V: The "Wood Thrush" for January 20; Baltimore Completes Local Organization 49; VI: Catoctin Conference 1950 53; Trip Reports 59-60; IX: Field Trips 1952 15-16.

Cummings, Jimmy--XII: Talbot Juniors Visit Hawk Mountain 33.

Cutler, David A.--VIII: First Kittiwake Specimen for Maryland 16.

Davis, David E.--I: See John T. Emlen, Jr.; II: Food Habits of a Barn Owl 42; XI: American Egrets Nesting in Chesapeake Bay 11; Report on Robin Nest Survey 53.

Davis, E. G., W. T. Davis and J. E. Willoughby--VII: White-crowned Sparrows Wintering on the Eastern Shore 17.

Davis, W. T.--VII: See E. G. Davis.

DeHart, Jon--V: October Meeting, Allegany Junior Club 66.

Denmead, Talbott--X: Passenger Pigeon in Maryland 56.

Dyke, Samuel H.--XIII: Buff-breasted Sandpiper, First Sight Record for Maryland 72.

Elkins, Francis T.--I: Additional Records for Birds of Baltimore and Vicinity 16.

Emlen, John T., Jr., and David E. Davis--I: A Flock of Evening Grosbeaks 24.

Fletcher, A. J.--XII: Raccoons Attack Nesting Martins 5-6; Maryland Nest Summary for 1955 41-48, 100; List of Caroline County Birds, Maryland Avifauna No. 1; XIII: Maryland Nest Summary for 1956 10-17; M.O.S. Annual Convention 40.

Fletcher, Roberta B.--XI: Mockingbird Takes Over a Cardinal Nest 51; XII: Supplying Nest Material Simplifies Nest Finding 6; Maryland Nest Summary for 1955 41-48, 100; List of Caroline County Birds, Maryland Avifauna No. 1; XIII: Maryland Nest Summary for 1956 10-17; M.O.S. Annual Convention 40, Redstart on My Shoulder 70-71.

Gatchell, Margaret R.--XI: Late Nesting of Carolina Wrens 51.

Gentile, Joseph--III: Observation on the Long-billed Marsh Wren 14.

Gephart, Anne S.--II: At the Feeding Shelf 34.

Gibson, Dan--XIII: The First Day of the Year 22.

Grant, Edward R.--VII: The Last Maryland Flight of the Passenger Pigeon 27-29.

Green, W. B.--III: Field Trip Report 31; V: Birds of Baltimore City Parks: I Wyman's 19-20; Club Events 37, 38.

Haile, Margaret E.--V: Worthington Valley Field Trip 49; VI: Conowingo Field Trip 21.

Hampe, Irving E.--I: Field Trip Report 1-2; The Lesser Scaup in Maryland in Late Summer 13; A Late Summer Bird Trip 14-15; II: Ducks

Limited 1; Late Fall Date for the Rose-breasted Grosbeak 3; The Patapsco State Park Spring Trip 15-16; Bluebirds at Arbutus 26-27.

Hampe, Irving E. and Gorman M. Bond--III: A Christmas Bird Census in the Rain 4-5.

Haynie, Larry L.--III: Crested Flycatchers and a Sunpaper Box, Middle River 52; A Warbling Vireo's Nest in Waverly 57; V: Backyard Nesting at Middle River 33-34.

Hackman, Douglas--X: A Summary of Hawk Flights over White Marsh, Baltimore County 19-27.

Heaps, Pearl--II: Christmas Bird Count 1945 2; September Local Field Trip 36; Chimney Swift Migration in Baltimore 42; III: Bobolinks in Harford County 54; Swallows at Druid Lake 66; V: Bird Life on Druid Lake in 1948 11.

Hewitt, Marvin--XI: Red-headed Woodpecker Seen in Caroline County 52; Semipalmated Plover New Bird for Caroline County 52; XII: Can You Identify These? 48; List of Caroline County Birds, Maryland Avifauna No. 1.

Hibberd, Gertrude J.--IV: The Joy of Feeding Our Winter Birds 30.

Hoyler, Mabel J.--VII: Escaped American Magpie at Frederick 24.

Isaac, Oliver B.--III: West River Field Trip 85-86; Allen Lecture: Battle of Birds vs. Insects 90; V: Annual Business Meeting 1949 48.

Jones, Percy W.--IX: Adventure of a Baltimore Birder at Pleasant Valley Camp, Garrett County 11-14; XIII: Report of State-wide Bird Count May 4, 1957 27-34, 44.

Kaufmann, John H.--XI: A Christmas Trip to Mexico 30.

Kent, N.C.--I: Field Trip Report 3-4.

Kleen, Richard L.--X: Talbot County Bird Club Organized 39; XI: Annual Convention Ocean City 1955 66; XII: A Trip to Sharp's Island 3-5; Arkansas Kingbird in Talbot County 59; A Productive Nesting Area 65-66; XIII: 1956 County Bird Lists 3-9; Junior Achievers 23.

Knight, Gordon--XII: Pleasant Valley and the Junior Nature Camp 32-33; A Review of the Ninth Annual Junior Nature Camp 92.

Knotts, Alicia O'C.--List of Carolina County Birds, Maryland Avifauna No. 1.

Kolb, Haven--I: Migrating Blackbirds 26; Editorial Notes 27; II: Editorial Notes 6-7; Christmas Bird Count 1945 2; The Season 10-11, 17-18, 28-29, 36-37, 43-44; III: The Season 7, 16-18, 45-46; Notes and News 16-17; Recent Ornithological Literature 89-90; VII: Report on Bird Day 1950 30-37.

Kolb, Haven and Richard Cole--VI: Winter Bird Population Study 34.

Kuch, Ilse Kind--III: Notes on Pikesville Nests 75-77; St. Francis Sanctuary Field Trip 84; IV: American Egret Eats a Mole 32; V: Winter Roosting of a Pair of Carolina Wrens 34-35.

Lenderking, Ruth--VI: Trip Report 58.

Lipscomb, Carrie--IV: Club Events 31.

Livingstone, Nan--III: Allegany Field Trip Reports 88; VI: Trip Reports 44.

Lloyd, Marie--XII: Operation Bird Nest 65.

Lloyd, Meade--XII: A Dead Red-tail Hawk at St. Michaels High School 34.

Low, Seth H.--VI: Maryland Christmas Bird Counts 1948-49 and 1949-50 18-29; VII: Bird-banding in Maryland 21-22; VIII: Summary of Maryland

Christmas Counts 1950-51 3-9; XII: We Are Incorporated! 60.

Malcolm, Adele E.--VI: Trip Report 44; VII: Field Trips 23-24.

Marshall, Med--XII: A Dead Red-tail Hawk at St. Michaels High School 34.

Mayhood, Charles H.--VIII: Wintering Sora Rail at Cedar Point, Charles County 15.

McCown, Richard B.--XIII: Kent County Chapter Organized 79.

McDonogh Bird Club--V: Behavior of Mallards Released at McDonogh 4; Food for Birds by the Acre 18.

McHoul, William--II: Christmas Bird Count 1945 2.

Meanley, Brooke--III: The Upland Plover in Frederick County 53-54; The Nashville and Tennessee Warblers at College Park 54.

Messix, Michael--VIII: Our Trip to the Glenn L. Martin Refuge 22.

Michel, Tony--XIII: Cardinal Fights His Reflection 41.

Miller, Mrs. Helen B.--III: Allegany County Report for April 32-33; Allegany Field Trip and Meeting Notes 88; V: Allegany Activities 12; Pleasant Valley Nature Camp 1949 64-65; XIII: Pleasant Valley--a Junior Nature and Conservation Camp in Western Maryland 47-51; A Bewick's Wren Nest in Allegany County 51-52.

Mitchell, Robert T.--XII: Can You Lend a Hand? 8.

Mohlhenrich, John--VII: Field Trip 23.

Moore, Terry--XII: My Trip to Dorchester County 104.

Nevius, Nita--XII: Helpful Gulls 9.

Offutt, Jane--XII: Wilson's Warbler Wintering in Talbot County 99.

Partridge, Mrs. Melvin H.--IX: A Northward Flight of Evening Grosbeaks 14.

Passmore, Harold--III: Field Trip Report 31.

Portillo, Frank--X: Conservation and Nature Study on Parade 38.

Power, Donald--X: Summer Birds of Camp Roosevelt 43-48.

Preston, F. W.--XIII: Analysis of Maryland State-wide Bird Counts 63-65, see also 80.

Ramsey, A. O.--V: The Propagation and Study of Game Birds in Captivity 59-62.

Richards, John W.--IX: Some Records New to Frederick County 2-4; X: Rufous Hummingbird Seen at Emmitsburg 36.

Riesz, Richard P.--XI: "Operation Recovery" 62.

Rittenhouse, Wilbur--VII: A Notice to Juniors 104.

Robbins, Chandler S.--II: The European Widgeon in Maryland 41; III: The Season 46-52, 78-83; Do You Keep a Bird List? 77; IV: The Season 1-2, 12-13, 18-21, 23-24, 28-30; Maryland Christmas Bird Counts 1947 3-9; V: The Season 8-10, 21-23, 30-32, 50-53, 56-58; Summary of Maryland Nest Records 1949 41-48; State-wide Bird Count 1949 62-63; VI: The Season 12-15, 30-34, 38-43, 47-52, 55-58; Hawks over Maryland Fall of 1949 2-11; VII: The Season 18-20, 38-40; VIII: The Season 12-15, 20-26, 44-48; Bird Day Report 1951 26-32; IX: The Season 5-10, 24-32; The Evening Grosbeak in Maryland 19-23; X: The Season 11-16, 49-55; XI: The Season 12-16, 54-61; XII: The Season 25-31, 61-64, 87-91, 102-103; Christmas Count Highlights 7-8; Report of State-wide Bird Count 1956 49-56; XIII: The Season 18-20, 37-39, 53-58, 73-78; Report of State-wide Bird Count 1957 27-34, 44; An Editorial 80.

Robbins, Eleanor Cooley--V: Bird Trip Etiquette 5-7; Song Sparrow Nesting 16-18. See also Eleanor G. Cooley.

- Robey, Walton--III: A Summer at Hawk Mountain Sanctuary 57-58.
Royal, Margaret and Bill--V: Club Events 37; VI: Annual "Waterfowl Round-Up" 1950 45.
Sandy, T. M.--V: "Head of Chesapeake" Trip 26.
Simon, Stephen--II: Christmas Bird Count 1945 2; VII: The 1954-1955 Invasion of Black-capped Chickadees into Maryland 74-85.
Smith, Rodgers Tull--VIII: Bob-white Seek Shelter in Woodchuck Hole 16.
Snow, May M.--X: Lunch Hour at a Dogwood Tree 37.
Soulsman, Ronnie--XII: A Dead Red-tail Hawk at St. Michaels High School 34.
Springer, Paul F.--VI: Ocean City and Blackwater 35.
Spurry, Marjorie C.--XI: My Bird-watching Son 65.
Steilkie, Herndon--XII: A Dead Red-tail Hawk at St. Michaels High School 34.
Stewart, Robert E.--III: The Distribution of Maryland Birds 55-57, 71-73; V: The Distribution of Maryland Birds 2; XII: Gadwall Breeding in Dorchester County 86.
Stoehr, Fr. Edward--XII: A Conservationist's Prayer 100.
Stokes, Alice H.--II: Nest-building by the Osprey 27.
Stokes, Allen W.--II: Pigeon Observations 12; Gannett at Ocean City 27; III: Breeding Bird Census at Lake Foland 1946 12-14.
Stollenwerck, Mrs. Frank--II: An Amateur's Vacation 42-43; III: Field Trip Report 30; The Ornithological Society Presents Mr. Harwell 35; IV: December Meeting Features Dr. Elliott's Pictures 2; VII: Field Trip 23.
Strack, Herbert P.--II: Birds in Our Yard This Summer 32-34; III: Field Trip 11.
Strack, Mrs. Herbert P.--I: Nesting of Great Horned Owls 23.
Tappan, Elise G.--XIII: Blow Me Down! A White Pelican at Gibson Island 70.
Tascherberg, Yvonne--VI: Trip Report 44.
Teeter, Viola C.--III: Foster Parent Problems at Elkton 74-75.
Thompson, A. May--List of Caroline County Birds, Maryland Avifauna No. 1.
Triplett, William H.--V: A Planned Visit to a Crow Roost 35.
Vinup, Mrs. Frederick H.--VI: Anne Arundel Walk: Gibson Island 16.
Voshell, James--XII: A Dead Red-tail Hawk at St. Michaels High School 34; XIII: A Trip to Blackwater Refuge 21.
Webster, Clark G.--IV: Midwinter Field Trip, Blackwater Refuge-Ocean City 14; VI: European Teal in Maryland 37.
Webster, Helen L.--VII: Summary of Maryland Nest Records 1950 8-16.
Wendt, Lorina M.--VI: Eastern Shore Field Trip 15.
White, Elizabeth Moffat--V: A Member Reports from New Zealand 7.
Willis, Edwin--V: Fall Field Trip to St. Francis Sanctuary 66; VII: A Nesting Study of Purple Grackles at Middle River 3-7; VIII: Summary of Maryland Nest Records 1951 35-43; X: Summary of Maryland Nest Records 1952 3-10; Summary of Maryland Nest Records 1953 27-36; XI: Maryland Nest Summary for 1954 3-11.
Willoughby, J. E.--VII: see E. G. Davis.
Worthley, Elmer G.--XI: Baltimore Bird Club Trips 1954 Summary 31; The Vegetative Identification of Marsh Grasses of Maryland 47; XIII: In

Memoriam: Richard Daniel Cole 66-89.

Worthley, Jean Reese--X: Bewick's Wrens Wintering at Owings Mills, Baltimore County 48; XII: Successful Relocation of an Eastern Phoebe's Nest 72.

Conservation in 1958 (continued from page 104)

such detrimental dams as Bruce's Eddy, Nez Perce, Glacier View, Smoky Range, and Flathead. The July 1 issue [23 (13): 6] continues with regard to the main Columbia above Grand Coulee: "It is in this part of the Columbia Basin that negotiations with Canada might lead to agreement on big reservoirs, like the Libby dam on the Kootenai River, which could effectively serve both Canada and the United States. But efforts there have been stalemated and little has been done toward negotiating with the Canadians to secure the best development of this stretch of the river for mutual benefit of their country and ours. In the meantime, the Canadian Government is considering diversion of a large part of the upper Columbia's flow into the Fraser River so that it will be carried to the ocean without ever coming through the United States. The dams required to use these diverted waters would deal a death blow to sockeye salmon fisheries of the Fraser and Puget Sound." E.C.W.

COMING EVENTS

- Nov. 28 BALTIMORE BONUS LECTURE by Mr. James Fowler, Cranbrook Institute, Michigan. Subject: "Caves".
- Nov. 29 Annapolis field trip to BLACKWATER REFUGE. Meet 8 A.M. Dutch Mill on U.S. Rte. 50. Leader: Ed Barry.
- Dec. 5 TALBOT monthly meeting. Movie.
- Dec. 5 BALTIMORE meeting at Pratt Library, 8 P.M. Motion picture by Prof. and Mrs. Howard.
- Dec. 8 Takoma Park monthly meeting
- Dec. 14 Baltimore trip to DICKEYVILLE. Meet Walbrook Junction, 2 P.M. Leader: Mrs. James Hunley.
- Dec. 20 CATOCTIN MT. Christmas Bird Count. Register with Dr. John Richards, Emmitsburg, Hillcrest 7-4006.
- Dec. 20 CAROLINE COUNTY Christmas Bird Count. Register with Mr. Marvin Hewitt, Greensboro, Md., Greensboro 5781.
- Dec. 21 ANNAPOLIS AND GIBSON ISLAND Christmas Bird Count. Register with Cdr. Wilson, Annapolis, Colonial 8-3692.
- Dec. 21 ST. MICHAELS Christmas Bird Count. Register with Mr. Richard Kleen, St. Michaels, Riverview 5-4651.
- Dec. 27 SENECA Christmas Bird Count. Register with Miss Hilda E. Smith 9912 Cherry Tree Lane, Silver Spring, Md.
- Dec. 28 KENT COUNTY Christmas Bird Count. Register with Mr. Richard McCown, R.F.D., Chestertown, Md.
- Dec. 28 TRIADELPHIA RESERVOIR Christmas Bird Count. Register with Mr. Seth Low, Gaithersburg, Spring 4-3065.

- Dec. 30 OCEAN CITY Christmas Bird Count. Register with Mr. Chandler S. Robbins, Laurel, Md. Parkway 5-1176.
- Dec. 31 SOUTH DORCHESTER COUNTY Christmas Bird Count. Register with Chandler S. Robbins, Laurel, Md. Parkway 5-1176.
- Jan. 1 Date reserved for any Christmas Count postponed because of bad weather.
- Jan. 9 BALTIMORE monthly meeting. "Bird Banding" by Mr. Seth Low, President of the Eastern Bird Banding Association.
- Jan. 11 Talbot trip to KENT ISLAND. Meet 7 A.M., 419 Elm Street, Takoma Park. Bring lunch.
- Jan. 16 ANNAPOLIS monthly meeting. "Backyard Birding" by Prof. and Mrs. David Howard. Meet 137 Monticello Ave., 8 P.M.
- Jan. 22 TALBOT monthly meeting. Audubon Screen Tour by Ernest P. Edwards. Register with Miss Edith Adkins, Easton, Md. Phone TA. 2-1545.
- Jan. 28 FREDERICK monthly meeting, 8 P.M., Burr Artz Library.
- Jan. 31 ANNAPOLIS "Early Birding". Meet Little John Hill, Sherwood Forest, 7:30 A.M. Register with Mr. Miner, VI. 9-4334.
- Feb. 13 TALBOT monthly meeting. Audubon Screen Tour lecture by Laurel Reynolds, "Western Discovery". Register with Miss Edith Adkins, Easton, Md. TA. 2-1545.
- Feb. 13 BALTIMORE monthly meeting, 8 P.M., Pratt Library.
- Feb. 25 FREDERICK monthly meeting, 8 P.M., Burr Artz Library.
- Feb. 28 ANNAPOLIS "Early Birding". Meet Edgewater, Md., 7:30 A.M. Register with Harvey Hall, Edgewater, Md. Colonial 8-3556.
- Mar. 6 BALTIMORE monthly meeting, 8 P.M., Pratt Library.
- Mar. 6 TALBOT monthly meeting. "South American Trip" by Mr. Richard L. Kleen.
- Mar. 25 FREDERICK monthly meeting, 8 P.M., Burr Artz Library.
- Mar. 28 ANNAPOLIS "Early Birding". Meeting 7 A.M., 608 Monterey Ave., West Annapolis. Register with Mrs. Garner, Colonial 3-3787.
- Apr. 7 TALBOT monthly meeting. Audubon Screen Tour lecture by Fran Hall, "Puerto Rico, U.S.A.". Register with Miss Edith Adkins.
- Apr. 10 BALTIMORE monthly meeting, 8 P.M., Pratt Library.
- Apr. 17 TALBOT seminar: "Spring Plumages of Warblers" by Chandler S. Robbins.
- Apr. 24 TALBOT monthly meeting.
- Apr. 25 ANNAPOLIS "Early Birding". Meet 7 A.M. Luff's Farm, Davidsonville Road. Register with Mrs. Luff, Colonial 3-5588.
- Apr. 29 FREDERICK monthly meeting, 8 P.M., Burr Artz Library.
- May 1 ANNAPOLIS business meeting and picnic. Meet 3:30 P.M. "Mullikins Delight" Mitchellville. Register with Mrs. Kirtley, Cedar 6-8392.
- May 3 STATEWIDE BIRD COUNT. Make count in area of your choice. Turn in list and coverage details at Statewide Convention next week. It is suggested new participants refer to the June 1958 issue for details.
- May 9 and 10. ANNUAL STATEWIDE CONVENTION. Details to be announced later.
- May 13 TALBOT meeting. Audubon Screen Tour lecture by Emerson Scott, "Rocky Mountain Rambles". Register with Miss Edith Adkins.